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CONTENTS

	PAGE
Editorials	717
Letters to the Editor	722
Publications Received	723
The Scrap Heap	724
Overseas Railway Affairs	725
Route Mileage of the German State Railways	727
Railways at the New York World's Fair	729
Road Transport Section	731
Automatic Locomotive Water Scoop Control	745
Railway News Section	747
Personal	747
Railway News Articles	750
Notes and News	760
Contracts and Tenders	762
Official Notices	763
Railway Share Market	764

Conscription

ON April 26, the Prime Minister announced in the House of Commons that the Government had decided that, to meet the exceptional conditions, some measure of compulsory military training has "for the time being become necessary." He stated that a Bill would be introduced giving power to call up for a six-month training all men between the ages of 20 and 21; the number available was estimated at about 200,000. On Friday last, April 28, the proposal was debated in both Houses of Parliament. In moving the motion in the Commons the Prime Minister explained that the proposal was not one for the substitution of a compulsory system for a voluntary system. It is a limited measure designed only to meet immediate and temporary needs. It will be framed specially to emphasise its temporary character, and it will deal only with the numbers of men who are now required. The motion was approved by a majority of 376 to 145. In the House of Lords the motion was agreed to without a division.

* * * *

The Bill and the Railways

The Military Training Bill, mentioned above, was introduced in the House of Commons on Monday last, May 1, and submitted to the House for second reading yesterday (Thursday). It seems clear that railway employees as a class will not be exempted from the provisions of the Bill and the railways must therefore face the prospect of losing, quite soon, the services of those members of their staffs

between the ages of 20 and 21. The number of such men is not perhaps considerable, but their departure into military service will create not a few problems for the railway companies, and possibly also for the trade unions. The Bill requires employers, under penalty, to reinstate in his previous employment or some other employment not less favourable, any man called up for compulsory military training, so questions affecting promotion and seniority are certain to arise, especially in the case of engine cleaners. After the continuous six-month period of military training, the young men to whom the Bill applies will be liable to be called upon to fulfil the normal obligations of a Territorial soldier including attendance annually in camp. As such camps are usually held at periods when railway traffics are heavy, this requirement to release employees to attend camps will add to the difficulties of the companies, who may, however, be relied upon to meet this new situation with their traditional attitude of helpfulness and good will.

* * * *

The Week's Traffics

Increases are shown by all the four main-line railways in their traffic returns for the past week, which compares with a normal week in 1938. The net advance of £132,000 for the week is made up of £90,000 from merchandise and £69,000 from coal to which all the four companies contribute, less a net decrease of £27,000 in passenger train earnings in which the Southern is alone in recording an increase. For the year to date the total earnings of the four companies amount to £48,613,000, a decrease of £1,323,000 or 2.65 per cent. Aggregate coal earnings are now £145,000 up on the L.M.S.R. and £10,500 up on the Southern.

	17th Week				Year to date	
	Pass., &c.	Goods, &c.	Coal, &c.	Total	Inc. or Dec.	%
L.M.S.R.	- 14,000	+ 45,000	+ 9,000	+ 40,000	- 538,000	- 2.66
L.N.E.R.	- 10,000	+ 15,000	+ 46,000	+ 51,000	- 571,000	- 3.80
G.W.R.	- 4,000	+ 28,000	+ 1,000	+ 35,000	- 146,000	- 1.75
S.R.	+ 1,000	+ 2,000	+ 3,000	+ 6,000	- 68,000	- 1.07

The Great Northern Railway (Ireland) has a net increase of £1,950 for the past week bringing its total increase for the year up to £23,300, to which passengers contribute £2,450 and goods £20,850. By its net gain of £2,014 for the past week the Great Southern is now £886 up on the year's figures. London Transport receipts for the past week show an improvement of £11,200, making the increase for the 44 weeks £236,700.

* * * *

New Member of L.M.S.R. Executive

The L.M.S.R. Executive Committee has been increased this week by the appointment as a member of Mr. G. L. Darbyshire, the company's Chief Officer for Labour and Establishment since 1930. An expert on staff matters thus joins the other specialists on a committee which already constitutes a formidable reservoir of experience. Management of the L.M.S.R. has been since January 1, 1927, in the hands of an executive composed of a President (also Chairman of the company), vice-presidents, and, at first, the Secretary and Assistant to President, and the Chief Legal Adviser. In 1930 another member was added in the person of the company's Officer for New Works and Parliamentary Business, the holder of that position ranking thenceforth as a chief executive officer. With Mr. Darbyshire's advent the committee now numbers eight effective members, for, although there are four vice-presidents, one of them, Mr. Ashton Davies, is Acting Vice-President in place of Mr. E. J. H. Lemon, who is on loan to the Air Ministry as Director of Production. In his capacity as Chief Officer for Labour and Establishment, Mr. Darbyshire has charge of the payroll arrangements of upwards of a quarter of a million individuals,

in addition to his responsibilities in respect of the police, medical, educational, and welfare services, and the superannuation funds.

* * * *

Overseas Railway Traffics

The forward movement in Argentine railway traffics continues, and in the last fortnight substantial improvement has been shown by all companies. On the Central Argentine the increase during this period has been £51,141, on the Buenos Ayres Great Southern it has been £45,162, on the Buenos Ayres & Pacific £26,302, and on the Buenos Ayres Western £25,496. By last week's increase the Western has converted its previous decrease for the year into an improvement of £7,816. The Great Western of Brazil is £43,300 up on the year to date.

	No. of Weekly Week Traffics	Inc. or Decrease	Aggregate Traffic	Inc. or Decrease
Buenos Ayres & Pacific	44th 104,404	+ 12,093	3,816,815	- 24,381
Buenos Ayres Great Southern	44th 158,127	+ 30,211	6,348,325	- 267,803
Buenos Ayres Western	44th 60,732	+ 9,119	2,011,166	+ 7,816
Central Argentine	44th 129,274	+ 25,871	5,163,154	- 165,500
Canadian Pacific	16th 457,000	- 6,200	7,312,400	- 172,000
Bombay, Baroda & Central India	3rd 267,900	- 15,825	527,550	- 30,900

Gross earnings of the Canadian Pacific Railway for the first quarter of 1939 amounted to £5,869,200, a decrease of £164,000 in comparison with the first quarter of 1938.

* * * *

The Railway Salesman

Books of etiquette make amusing reading, because there is humour in looking behind the façade of good behaviour at the machinery which ensures it. The railway salesman is no less subject than the hostess or the débutante to the rules of aplomb, and Mr. Ashton Davies made reference to them in his presidential address to the Railway Students' Association on April 27. An abstract of his speech on page 750 reveals the thoroughness with which Mr. Ashton Davies analysed the conditions leading to the establishment of railway salesmanship principles, and the results achieved by their application. He dealt also with the mechanics of canvassing, urging the salesman to acquire general knowledge adequate for courteous discussion on subjects as diverse as baby foods and the probable successor to the Archbishop of Canterbury. After this, it was good to read that the rude, unlettered press is not despised as an advertising medium; Mr. Ashton Davies quoted an example in which a misprint in an advertisement appearing once only drew 300 people to the station for a train that did not run.

* * * *

Cup Final Arrangements

The brunt of the Wembley-bound traffic from the provinces on Saturday last was borne by the L.M.S.R., which carried no fewer than 28,000 persons "up for the Cup" in 57 special trains. Some details of this company's comprehensive Cup Final arrangements appear on page 761 of our news section this week; suffice it here to say that twenty-three of the specials were run from the Wolverhampton area alone. Most of them terminated at Euston, though others ran to St. Pancras, Kensington, and Wembley stations—the last-mentioned received many of the later specials. To avoid confusion, all the special day-excursionists had one-piece tickets printed with the number of the special train by which they were booked. The usual service of suburban electric trains calling at Wembley was augmented just before and after the match by a series of special steam trains. The Great Western Railway was responsible for the conveyance in 37 specials of some 17,000 football "fans," mostly from the Wolverhampton district. Twenty-nine special trains, bringing passengers from as far away as the Border, were provided by the L.N.E.R. Between Marylebone and Wembley

Stadium stations the L.N.E.R. ran a special service of non-stop trains. The Southern Railway ran 12 special electric trains from Portsmouth to Waterloo, bringing 7,300 "Pompey" supporters to Wembley. The Portsmouth team travelled by special train to Victoria.

* * * *

Air Service Improvements

Dissatisfaction in Manchester with air connections to and from London was the subject of a note in our December 30 issue, the complaint being that Mancunians were obliged to change at Liverpool in both directions. A news paragraph this week records the grant of a licence to Railway Air Services Limited for a modification of its London—Glasgow route to take in Manchester, and the revised schedules given in the May issue of *Bradshaw's International Air Guide* indicate a substantial improvement in connections with Lancashire generally. From May 22 Liverpool will have three services daily to and from London, compared with two last summer, and two of these each way will land at Manchester. One service both ways is to fly non-stop between London and Manchester in 1 hr. 20 min. Glasgow will again enjoy the direct service from London via Liverpool, avoiding the Belfast detour, that was instituted in connection with the Empire Exhibition last year. In the South, Great Western & Southern Airlines Limited is to usher in its first season with the cross-country and London—Ryde services to which we have already referred, and with the innovation of quite an intensive "shuttle" between Lands End and the Scilly Isles—six services each way.

* * * *

An Automatic Tender Water Scoop Control

In these days of pressing need for economy in all directions of operations and maintenance on the home railways no likely opportunity of possible saving which will not impede efficiency can be ignored. Wastage in various directions of water intended for locomotive boilers is a case in point which has not escaped the attention of those concerned. Water has to be bought or pumped at some expense, added to which there is nowadays the cost of subsequent chemical treatment, so that losses brought about by inefficient methods of delivery to the locomotive are to be deprecated. It will be recalled that the L.M.S.R. a few years ago experimented with scoops and troughs to reduce wastage of water being picked up at speed, and the anti-splash plate was the result. Further loss takes place when the fireman, due to the heavy rush of water, is unable to lift the scoop by the handgear when the tender fills before completely clearing the trough. An apparatus designed to effect the lifting of the scoop automatically when the tender is full is described on page 745 of this issue.

* * * *

Faster German Cross-Country Communication

The German summer timetables, coming into force on May 15, and described on page 756 of this issue, are notable by reason of the widespread introduction of further diesel railcar services, which will bring the total daily journeys of these units up to 36, covering almost every main line in the country with a network of high-speed travel. Of the latest introductions, only the new Berlin-Basle service, referred to in our March 17 issue, and covering 544.7 miles in 8½ hr., radiates from the capital; all the other five, connecting Westphalia with Basle, Leipzig with Bremen, Leipzig with Breslau, Leipzig with Cologne, and Dresden with Hamburg, being cross-country, and all at overall speeds exceeding 60 m.p.h., inclusive of intermediate stops. Even over such a route as Dresden-Hamburg it is found possible to introduce a non-stop run of 169.3 miles at 72.6 m.p.h. Certain of the existing

services are accelerated, the Fliegende Kölner by 11 min. from Berlin (Zoo) to Hanover, which brings its booked speed over this stretch of 157.8 miles up to 83.1 m.p.h. start to stop—the fastest scheduled run in the world—and then 82.2 m.p.h. over the 109.6 miles from Hanover to Hamm. All the six diesel workings over the 178.1 miles between Berlin and Hamburg are now timed at between 76.3 and 78.0 m.p.h. Some of these trains now run in multiple-unit formation up to six cars, so, except for being second class only, providing all the internal accommodation and facilities of FD expresses. Steam services also are not neglected, as witness the new FD express between Berlin and Königsberg, with its 64.7 m.p.h. non-stop booking over the 153.1 miles between Schneidemühl and Berlin.

* * * *

An American Signal Engineer's Impressions

In the autumn of last year, Mr. P. M. Gault, Signal Engineer of the Missouri Pacific Railroad, visited Europe, and was present at the annual dinner of the Institution of Railway Signal Engineers in London on October 14, 1938. Speaking at the annual meeting of the Signal Section of the Association of American Railroads in Chicago on March 13 and 14 last, he gave some of the impressions he gained from his inspection of signalling methods and traffic working in Great Britain and a brief account of how they had come into being, with the reasons for the persistence of certain types of equipment. "The British have been slow," he is reported as saying, "to change from mechanical interlocking, but it was noted that where they have changed they go to the most modern equipment available." The use of route as opposed to speed signalling aspects Mr. Gault found interesting, and he commented on the "lack of uniformity" as between different railways. Actually, however, there is nothing like the diversity to be found here that there is in the United States. He found that we had "an excellently constructed and well maintained track structure" and remarked, "Nowhere have I ever had as smooth or satisfactory a ride as I experienced on British railways, and I rode on all four systems." He also rightly stressed the advantage to be gained by studying the practice of other countries.

* * * *

Cab Signals on San Francisco Local Lines

An interesting installation of continuous cab signalling has been applied to the electric suburban trains running over the bridge between San Francisco and Oakland, where the traffic, very heavy at certain times, was formerly accommodated by ferry boats. It was originally intended to use automatic signals and train stops, but it was considered that they would not provide all the facilities desired, while the prevalence of dense fogs at certain times would make a continuous cab signal a valuable aid to drivers. The equipment, which is described in main outline in our American contemporary, *Railway Signaling*, for March, 1939, is worked on the coded track circuit principle and combined with speed checking and controlling mechanism. The cab signal has four running aspects; green for the maximum speed allowed—35 m.p.h. on this section; green-yellow for 25 m.p.h.; yellow for 17 m.p.h.; and red for the danger block indication, when the driver may proceed with his train under control at not more than 11 m.p.h., prepared to stop short of any obstruction. An audible indication accompanies any restrictive change in the cab signal aspects, or any exceeding of the speed they impose, until appropriate action is taken. Lineside signals are, of course, used in interlocking areas where the fouling points need to be definitely located.

Netherlands Railway Centenary

To celebrate the centenary this year of the opening of the first railway in Holland, the Netherlands Railways are organising an exhibition at Amsterdam. One of the most interesting exhibits will be a model of the first train on the Amsterdam—Haarlem line, which was opened on September 20, 1839. This train, which will be able to carry 96 passengers, will make tours of the exhibition grounds and so give the public an opportunity of sampling early railway travel, in much the same way that the L.M.S.R. did at Liverpool in 1930—though in that case the original *Lion* locomotive was available for use—and the Reichsbahn at Nuremberg in 1935. We gather that work on this Netherlands train is well advanced; it is being made on a smaller scale than the original, as the first railway in Holland was built to a gauge of 2 metres (6 ft. 6½ in.), and if this were adopted for the copy it would not be possible to run it to the exhibition over the present standard-gauge railways. The concession for the Amsterdam—Haarlem line was granted by Royal Decree on June 1, 1836, and transferred in the next year to the Hollandsche IJzeren Spoorweg Maatschappij.

* * * *

New Equipment in the U.S.A.

On March 1 the Class 1 railroads in the United States had on order 63 new steam locomotives, compared with 25 on February 1, according to a report recently issued by the Association of American Railroads. These figures compare with 101 steam locomotives on order on March 1, 1938. The information regarding electric and diesel locomotives reveals that a total of 38 on order on March 1 of the present year compares with 59 a month earlier and 26 last year. Goods vehicle figures at the three dates are 6,788, 6,637, and 5,568. New goods vehicle equipment brought into service during the first two months of 1939 comprised 2,722 units, compared with 3,478 in the corresponding period of 1938, and 6,135 in 1937. The Class 1 railroads also introduced during January and February seven new steam and 28 electric and diesel locomotives. Last year the figures were 39 steam and 22 electric and diesel for the same period, and in 1937 the comparable totals were 22 and 7. Incidentally, all these figures exclude equipment leased or otherwise secured than by outright purchase.

* * * *

Rates Hearings to Music

The proposal to amalgamate the Kansas City Southern and the Louisiana & Arkansas Railroads was the subject of an investigation by the Interstate Commerce Commission towards the close of last January. A novel feature of the hearing on this occasion was the presentation of a moving picture with appropriate sound accompaniment, designed to show the various industries served by these two American railways and their physical properties such as stations, marshalling yards, rolling stock, and so forth. At this time, when our own Railway Rates Tribunal is hearing the pros and cons of raising fares in the London area by 5 per cent., is it not possible that the dreary financial statements could be enlivened by a sound film showing the efficacy of silent running in the tubes, so proving that the money received from tickets is being wisely spent; or to demonstrate the rapidity of movement by the latest type of escalator as compared with a lift? The opposing counsel should obviously be allowed to exhibit a film of similar length to show how many people can be packed into a tube or suburban train at rush hours. We make the suggestion in all sincerity, and as a measure of economy by curtailing the examination of witnesses.

Distribution of Air Raid Shelters

THE now familiar air raid shelter officially described as "the galvanised corrugated steel shelter" is being manufactured in sections by several firms in the iron and steel industry located in different parts of the country. The components need assembly into complete sets of parts before delivery is effected, and in undertaking the distribution of these shelters the British railway companies have acted and are acting somewhat beyond their normal role as carriers and are fulfilling the function of wholesale distributors on a large scale. From beginning to end the railway companies are undertaking conveyance (including in some cases collection), collation, and delivery to the extent of actually placing the parts on sites in accordance with the individual householder's wishes. The initial order was for 400,000 shelters, or approximately 180,000 tons of steelwork, to be produced by the manufacturers in 13 weeks; 19 firms are making the steel sheets, 38 more are constructing angles, tees, and channels, and a further 21 the bolts and nuts. As two-thirds of the sheet manufacturers are situated in South Wales and Monmouthshire, the Great Western Railway is vitally concerned in a large proportion of the traffic, and therefore the current issue of the *Great Western Railway Magazine* includes an article outlining the work involved. No fewer than five firms are engaged in producing the various parts necessary for every shelter, and it was essential for the arrival of various sections at destination stations to synchronise as nearly as possible in order to avoid interruption in delivery schedules. This was accomplished by setting up an allocation committee comprising representatives of the Home Office, the Sheet Makers' Association, sections of the British Iron & Steel Federation, the British Iron & Steel Corporation, and the railway companies, meeting every Wednesday afternoon at the offices of the Iron & Steel Federation to agree the allocation for every area in the country. We gather that this complex organisation is functioning smoothly and it is possible that the nearest approach to mishap occurs when the carmen have to negotiate narrow halls—complete with hat-stands, gas brackets, and pictures—in the final stages of delivery.

* * *

Railways and Show Traffic

AGRICULTURAL and horticultural shows have been for many years a prominent feature of the country life of Great Britain and the advent of Spring heralds for many the approach of the show season. The British railways can fairly claim that the services which they have been able to render have largely fostered the growth of these shows. When the venue of a show is settled and the entries received, the railway company or companies concerned work out, in close collaboration with the show officials, comprehensive schemes to ensure the smooth arrival and dispatch of the exhibits. In addition to livestock, shew traffic include heavy farming machinery, farming implements, electric cookers, and other articles ranging from caravans to wheelbarrows, and patent manures and seeds. As the date of the show approaches, thousands of railway sleepers are laid into the ground to form roadways, and a large number of special cartage vehicles is worked to the nearest station. Tractors and mechanical horses prove of considerable assistance, because after delivering loads to exhibitors' stands they can be utilised for other duties while unloading is proceeding. For the cartage of livestock, rubber-tyred floats are generally provided, and usually have detachable sides so that they can be used for other purposes if desired. Mobile

cranes, some of them lifting up to seven tons, are provided at the larger show grounds for positioning machinery and the major exhibits, while several of smaller capacity are generally provided.

The companies open special enquiry offices on the show grounds, usually representative of the four main-line companies, and here trained staffs can give full information on train services and facilities, maintaining the essential liaison between exhibitors and railway companies. Special excursion fares are generally advertised from all surrounding stations, special trains run where necessary, and train services altered to meet the convenience of visitors to the shows. It will be appreciated that the cost of staging a large exhibit at one show only might prove prohibitive, consequently the larger exhibitors transfer their exhibits from show to show throughout the season. The railway representatives keep in close touch with the officials concerned, for traffic leaving a show at night is frequently required in position at the next show early the next morning. Comprehensive operating programmes are drawn up in connection with these movements, frequently involving the numbering of special trains and the allocation of particular vehicles to farmers and others at specified times, these including special vacuum fitted well wagons, glass trolleys, and vehicles with accommodation for men to travel with the livestock. It is not unusual to find that ten special trains are required to leave the station adjoining the show ground on the evening on which the show closes, in order that the exhibits may be at their destination on the next morning. To assist exhibitors, the railway companies convey unsold exhibition traffic back to the forwarding station at owner's risk at half the rate charged on the outward journey, while the same concession is given in respect of traffic transferred from one show to another and thence back to its home station. Men in charge of livestock are also conveyed free under certain conditions, and facilities are given for the free carriage of specified amounts of provender or feeding stuffs.

* * *

Rhodesia Railways Limited

FURTHER satisfactory progress in the business done by Rhodesia Railways Limited is shown in the report for the year ended September 30, 1938. The results are those of the combined system formed by the acquisition, as from October 1, 1936, of the undertaking and assets of the Mashonaland Railway Co. Ltd. Gross revenue for the year under review increased by £321,567 or 6·8 per cent. in comparison with the previous year. General trade in Southern and Northern Rhodesia was well maintained and general goods traffic accounted for £219,577 of the increase in revenue. Passenger receipts improved by £19,536, and the balance (£82,454) of the increase was mainly due to higher receipts from mineral traffic. Tonnage of general goods increased by 71,786 tons, and the 950,359 tons of coal and coke traffic represented an advance of 42,597 tons due to increases in the local requirements of the general public and the copper mines. Copper from the mines in Northern Rhodesia and the Belgian Congo, which is one of the most important traffics of the system, was well maintained at 287,028 tons, only 1,297 less than in the previous year.

Working expenditure, including provision for depreciation and renewals of £518,161, showed an increase of £333,956, which, apart from two special items, was chiefly caused by the cost of dealing with the increase of 64,870 tons in traffic, involving an addition of 4·7 per cent. to the train-mileage. There was also an increase in pay for employees of about 4 per cent., which came into force

on March 1, 1938. Of the two special items one was an increase of £86,681 in the contributions to the pension funds, and the other was a provision of £40,000 to cover the company's share of the cost of claims and losses in connection with the accident on April 4, 1938, near Plumtree on the Vryburg—Bulawayo section which is worked by the South African Railways. By agreement between the two administrations the costs are being divided equally. The surplus of gross revenue over working expenditure was only £12,389 less than in the previous year, which was the best in the history of the company. Operating figures are compared in the accompanying table:—

	1936-37	1937-38
Miles open	2,442	2,442½
Train-miles	5,964,861	6,244,656
Passengers	784,291	857,811
Tons, general goods	1,239,603	1,311,389
Tons, minerals	1,789,324	1,782,408
Operating ratio, per cent.	59	61·8
Passenger receipts	£383,629	403,165
General goods receipts	2,059,819	2,279,396
Mineral receipts	1,970,915	2,027,697
Gross revenue	4,709,069	5,030,636
Working expenditure	2,776,407	3,110,363
Surplus	1,932,662	1,920,273

After providing for debenture interest and other charges there was a profit for the year under review of £827,860, compared with a profit of £916,772 in the previous year. In accordance with the terms of the railway legislation in force in the territories of Southern Rhodesia, Northern Rhodesia, and the Bechuanaland Protectorate, £100,486 of this profit has been placed to the credit of the Rates Stabilisation Account, making it £196,314, £100,000 has been transferred to the Dividend Account, and £627,374 has been placed to the credit of the Reserve Account, making it £2,303,031 at September 30, 1938. Out of the Dividend Account, which now amounts to £100,226, the sum of £100,000, less income tax, representing a dividend of 20 per cent. on the share capital, is being distributed to members. For the current year it is estimated that net revenue will produce the standard revenue (including £125,000 available for dividend) which the company is entitled to earn in that year under existing legislation. Gross receipts from road motor services during the year under review amounted to £62,502, as compared with £52,648 in the previous year. Of goods and agricultural produce 53,962 tons were carried by these services, an increase of 15,081 tons, as well as 43,833 passengers, an increase of 8,519.

* * * *

Movement of Wheels Along Railway Track

TWO interesting papers were discussed recently at the Institution of Civil Engineers, one by Dr. R. D. Davies on "Some Experiments on the Lateral Oscillation of Railway Vehicles," and the other by Professor C. E. Inglis on "The Vertical Path of a Wheel Moving Along a Railway Track." The former paper examines the conditions under which bogies start hunting. The investigation begins with model experiments on "creep" in directions both along and across the rail head. In conjunction with these tests, mathematical analyses were made, and, to check the whole series, full size experiments were carried out on the L.M.S.R. at "crawl" and normal speeds. The model used was an ingenious 1/5th full size bogie with various adjustments in order to be able to eliminate certain variables independently, and fitted with cylindrical steel wheels, all ground to the same diameter, without flanges. The rails were of 1½ in. by ¾ in. bright steel placed on edge with the top machined square, held in such a way that they could be tilted to give various rail cants. The motion of the

bogie along this track was recorded by a stylus tracing a line on a paraffin-wax-covered paper in the space between the rails. Conditions were not similar to those appertaining to railways, but the model was designed to study the fundamental characteristics of the problem. Some success was obtained, as proved by the full size trials, and it was found that with newly turned standard wheels the wavelength of the oscillations was between 50 and 60 ft., and the amplitude increased at a rate which varied directly as the square of the speed and inversely as the wavelength of the motion. With worn tyres, the wavelength is reduced and, therefore, the amplitude increases more rapidly. Cylindrical wheels would lessen this action considerably, but other advantages would be lost. The initial rail profile is immaterial as it is soon worn away. The author has not solved the problem, but is still continuing experiments, and it is hoped these will be successful, as his work so far does not elucidate the problem very much but shows the necessity for continued investigation.

In the second paper, Professor Inglis has added another chapter to his extensive work on oscillations of various types. In this case the object was to study the manner in which the running of an axle and a pair of wheels along a straight track is affected by elastic yielding of ballast, the stiffness of the rail, wheel loads, speed, and the lack of continuity at the rail joint. Calculations and experiments show that at slow speeds the more yielding ballast the less is the vertical movement of the wheel for a continuous rail, but at a joint the reverse applies. It is interesting to note that at high speeds the downward movement at a joint may be less than when the wheel velocity is smaller, due to the downward motion having a limited acceleration depending on that due to gravity and the power of the springs. The load on the sleeper just beyond the joint, however, is greatly increased and accelerations as high as ten times that due to gravity may be obtained on an unyielding foundation, and slightly less with an ordinary good bottom.

The author shows that a wheel travelling along a continuous rail with uniformly spaced sleepers develops a slight undulatory movement due to the alternating hard and soft spots at and between the sleepers respectively. With very yielding ballast, the movement is not so marked, but there is a critical speed, well within normal ranges, at which the motion will be considerably amplified. On the other hand, with exceptionally incompressible ballast the general smoothness will not be so good, but the critical speed will seldom, if ever be attained under normal working conditions. It is suggested that with the present practice of varying the sleeper spacing near the joints, synchronism is not likely to be obtained. Prof. Inglis points out that vertical movement at joints and in the middle of rails is greatly reduced when heavier rails are used, and shows comparative results for the British Standard 95 lb. bull-head rail with a moment of inertia of 36 in.⁴ units and a much stiffer, hypothetical rail having a moment of inertia of 72 in.⁴ units. The paper shows that the most serious vertical results are obtained at joints. A general and also considerable increase in weight of rails seems to be a rather expensive method of dealing with the problem and we feel that the design of an efficient joint is still the most economical solution, although it has taxed the ingenuity of engineers for many years. A little more information about the ballasts considered would be useful. The figures given by Prof. Inglis to denote the ballast resistance would be more appreciated from a practical point of view if he could state how they vary with usual types of stone, and the depth of ballast adopted. The depth is very important, especially when considering the distribution of the load on soft foundations.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

South for Sunshine

Southern Railway,
Waterloo Station

April 25

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—As readers will have seen from your issue of April 21, the L.N.E.R. has this year based its campaign on sunshine, although in 1938 that company's territory fared worse in this respect than in previous years. I now enclose a few years' sunshine records extracted from the Meteorological Office which prove that the Southern Railway slogan "South for Sunshine" is not an extravagant claim, but one of those realities similar to the fact that the sun rises in the east and sets in the west.

The L.M.S.R. has also used the sun prominently in advertisements for the West Coast, and to a small extent the Great Western, which company, due to the fact that it serves the South West of England, is always second to ourselves in the sunshine records. Some of the most prominent places in the sunshine lists are those served jointly by the Great Western and ourselves, such as the Channel Islands and Ilfracombe.

This company is now intensifying its campaign about sunshine, and has already produced a 16-sheet poster headed "Facts about Sunshine." Further posters on the same theme are in preparation.

Yours faithfully,

C. GRASEMANN
Public Relations and Advertising Officer.

[The Meteorological Office records, together with the new Southern Railway poster to which Mr. Grasmann refers in his letter, are reproduced on page 752.—ED. R.G.]

"Railways, Roads, and the Public"

25, Green Lane,
Northwood, Middlesex

April 21

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I have read with much interest the article in page 640 of your issue of today's date, under the heading "Railways, Roads, and the Public," which, despite its title, deals particularly with the question of railway capital. I quite agree with the general tenor of the article, and in regard to the final question, "Who, then, is supposed to benefit?" I am amongst those who are quite ready to give the answer that nobody will benefit from what would be, after all, only an attempt at deception. The arguments usually advanced for the reduction of railway capital are to the effect that railway profits are good but are made to look poor, because they are related to what is considered to be inflated capital. This argument I do not accept.

From time to time, however, I have mentioned the relationship of railway capital to the question of redundant railway facilities, in this way: I believe that one of the obstacles to a complete reorganisation of railway operating, involving the closing of unremunerative branch lines and small stations, and the concentration upon road/rail collection and distribution centres, is that the railway companies fear that this would involve a writing down of capital. They, therefore, have become "metal bound" in their ideas, and appear to be willing to incur expense in operating, which may be quite unnecessary, because of the fear that they would injure the railway capital position if they were to embark upon an effective co-ordination of railway and road transport.

It appears to me that the time has come when this major question of reducing current expenses should be given preference over the defence of a capital position which need never arise. I am perfectly certain that with a proper reorganisation of railway operating, even a greater burden of capital could be sustained than the present nominal capital;

in other words, that the potential value of the nominal railway capital, even upon an earnings basis, is much greater than is represented in terms of the nominal capital today.

Yours faithfully,

FREDERICK SMITH

New G.S.R. 3-Cylinder 4-6-0

390, Wakefield Road, Huddersfield, April 15

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The most unusual feature of the new G.S.R. 3-cylinder 4-6-0 locomotive described on pp. 617-619 of THE RAILWAY GAZETTE of April 14 is the fact that the inside cylinder exhausts through one blastpipe and chimney and the other two cylinders through a second blastpipe and chimney.

It will be interesting to know what results are secured with this arrangement. Superficially it appears that as the blastpipes do not discharge steam simultaneously, the inductive effect of a blast through one chimney will draw air down the other chimney and will therefore produce a negligible amount of draught on the fire. In normal double-chimney arrangements the same thing does not occur because each blast is equally divided between the blastpipes.

Yours faithfully,

W. A. TUPLIN

[The above letter was submitted to Mr. E. C. Bredin, Chief Mechanical Engineer of the Great Southern Railways, who replied as follows:—

"In practice the steaming capacity of the engine is quite satisfactory. The point raised is in fact a question as to the minimum frequency of exhausts required to maintain the necessary smokebox conditions. In a two-cylinder 8-ft. 0-in. wheel engine the frequency is only half that of say a 4-ft. 0-in. wheel shunting engine with the orthodox single blastpipe and chimney. The fact is, of course, that a volume of exhaust steam leaving the top of the chimney with a velocity at a maximum at low speeds, due to late cut off, expands rapidly, displacing the air surrounding it. The blast is followed by a volume of hot gases having an induced velocity which also expands on leaving the chimney; these conditions effectively prevent any rush of air through the chimney."]

"Locomotive Power and Efficiency"

163, Marlborough Road,
Gillingham, Kent, April 23

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Lord Monckswell's article in your issue of April 21 is of great interest, but it scarcely does justice to British locomotive performance. The exploits of L.M.S.R. No. 6234, *Duchess of Abercorn*, on February 26, recorded in THE RAILWAY GAZETTE of April 14, are not mentioned, even in a footnote. The maxima of 2,511 drawbar horsepower and of 3,348 indicated horsepower (calculated) are far higher than any previously published for express locomotives in Great Britain.

Yours faithfully,

A. P. LE M. SINKINSON

[Lord Monckswell's article was, of course, written and the proofs corrected before the account of the recent L.M.S.R. tests were published. Lord Monckswell has written to us subsequently in the following terms:—

"It is with much pleasure that I note the performance of L.M.S.R. engine No. 6234 on February 26. I may, however, point out that horsepower at the drawbar only once exceeded 2,500, while an examination of the diagrams on pp. 96-99 of Monsieur Chapelon's big book, shows some ten or twelve occasions when this was done by P.O.-Midi engine No. 4707 weighing 108 tons against 105 for the L.M.S.R. engine; 3,200 metric drawbar horsepower (about 3,150 British horsepower) were once reached. In these circumstances I look forward to further improved results from British steam locomotives in the future."—ED. R.G.]

PUBLICATIONS RECEIVED

Bradshaw's Guide.—The current issue of *Bradshaw's Railway, Shipping, and Hotel Guide for Great Britain and Ireland* appears in a cream cover printed in blue and gold, and a prefatory note explains that, as 1939 is being celebrated as the centenary year of *Bradshaw*, it is intended to adopt this livery from now until the September issue inclusive. For October, the centenary month, *Bradshaw* will be published in a gold cover printed in red and blue. From this announcement it appears that Henry Blacklock & Co. Ltd., the company owning the "*Bradshaw*" publications, intends to rely on the earliest known issue of a *Bradshaw* timetable in selecting a date upon which to celebrate its centenary.

The Railway. (Conquest of Space and Time Series.) By Edgar B. Schieldrop. London: Hutchinson & Co. (Publishers) Limited, 34, Paternoster Row, E.C.4. 9½ in. × 6 in. 256 pp. Fully illustrated. Price 5s. net.—This volume is the first of a series of four on the "Conquest of Space and Time" from the pen of Dr. Schieldrop, a Norwegian professor whose twenty years of research into mechanics and hydro-dynamics have made his name known far beyond the confines of his native land. That he is no mere anchorite professor, but one who has the rare gift of passing on his learning, is evident in the way he treats his subject in this book. The author must have had many opportunities in Norway, where railway construction has been so difficult, for observing how heroically the railway engineer conquers Nature. He can, therefore, sympathise the more with the railway engineer in his difficulties, and rejoice with him when they are at last surmounted. Dr. Schieldrop shows how the design and development of the locomotive has been influenced by the limitations of the line, clearance, gradients, weight restriction, and the rest. He describes the measures which have been taken to improve its efficiency, and the various types which have been designed to meet special conditions.

After tracing the development of the railway coach, the author outlines the safety measures which make it possible to travel a distance equal to 550 times round the globe "before being brought within the shadow of fatality." In a chapter entitled "Electric Locomotives" he explains how electrification is not necessarily the panacea for railway ills that some imagine it to be, and how the train-frequency and density of traffic of a railway are usually the factors which guide the management when studying the question of electrification. Of the concluding chapter, where Dr. Schieldrop takes a peep into the future, Sir Ronald Matthews, Chairman of the L.N.E.R., who contributes a foreword to this work, says, "in due time there will emerge for each and every form of

transport a well defined sphere of usefulness and activity." Though the form of locomotives and rolling stock may change, the track will remain. The value of the book, the style of which is acceptable to both the layman and the serious student, is enhanced by the many fine illustrations which supplement the text, and by an appendix of statistical tables and notes.

Fernsteuerung von Weichen und Signalen mit Hilfe von Schrittschaltern (Remote Control of Points and Signals by means of Step-by-Step Switches). By Dipl. Ingenieur Rehschuh. Berlin-Siemensstadt: Reprinted from *Zeitschrift für das gesamte Eisenbahn-Sicherungs- und Fernmeldewesen*, Nos. 12, 13 and 14, 1928. Publication No. 307, Vereinigte Eisenbahn-Signalwerke. 8½ in. × 11½ in. 17 pages. 20 figures.—This excellently printed and illustrated publication gives a concise account of the general principles underlying the conception of remote control of railway points and signals, and the conditions under which it may be used to advantage; it proceeds to explain the rotary step-by-step switch system of control developed in Germany for this purpose, with diagrams and illustrations of the mechanism. Examples are quoted from the installations made from time to time in the last ten years or so at the Theodor coal mines near Bitterfeld, the management of which has been remarkably progressive in realising the benefits to be obtained by using up-to-date signal equipment on its private railway system, which is much subject to fog. Similar switch apparatus has been used at Zurich and elsewhere to control the operation of route indicators and describers, and their working is also explained in these pages. The author is to be complimented on the clear manner in which he has presented his subject, enabling the reader to get a sound grasp of a very interesting type of equipment which appears likely to find quite a field of usefulness on the Continent.

Ingenious London Transport Pocket Map.—A device which will be remembered by many who used military maps in the great war has been adapted by the London Passenger Transport Board for its new pocket map of Green Line coach routes. When the sheet is folded in a certain way, the principal map joins up with a continuation printed on the back. Thus, although the map is no larger in size than the familiar Underground, bus, and trolleybus pocket maps, the area covered by the new Green Line folder, including the two continuation sections (north and south), is increased by 66 per cent. This is the first time that the board has issued a Green Line coach map to such a large scale, and to a scale that is uniform throughout. Hitherto it has always been necessary to increase the scale of

certain parts of the map for the sake of clarity, thus sacrificing geographical accuracy. The new map shows not only every regular coach stop, but also the more important open spaces belonging to the "green belt," and every return fare from Central London.

Tours to Norway.—From the B. & N. Line Royal Mail Limited, Whitehall, S.W.1, we have received some interesting and attractive literature giving details of the company's cruises and tours to Norway this summer. The luxuriously-appointed vessels, the steam yacht *Meteor* and the liner *Stella Polaris*, which was built specially for cruising, are making a series of cruises to the fjords of this friendly and hospitable land. Their itinerary will include such places as Bergen, the old Hanseatic port and second largest city of Norway; Hammerfest, the most northerly town in the world; and the North Cape in the land of the midnight sun, besides many beautiful fjords too numerous to mention. They are also cruising in the romantic Baltic Sea and visiting Scandinavian capitals. "Holiday Tours in Norway" gives the price and itinerary of holidays at lakeside and inland centres of Western Norway—the passage from Newcastle to Bergen is made in one of the fine motor vessels, *Venus* or *Vega*. There is, in addition, a folder describing a week-end cruise to Bergen for £6 first and £4 10s. second class.

An April-March Calendar.—The Metropolitan-Vickers Electrical Co. Ltd. issues annually what is described as a "girl" calendar, the centre of interest, apart from the tear-off dates, being a portrait study of a girl. This publication is appropriately timed to appear in Spring, when resistance to its attractions is presumed to be at its lowest ebb, and is current from April until March, 1940. The anonymous beauty of the present issue is the twenty-fifth of her line to bewitch calendar-lovers.

Lifting Tackle.—The Rope, Twine, and Net Manufacturers' Federation has brought out a handbook to help users of fibre ropes and lifting tackle to comply with the provisions contained in the Factories Act, 1937, regarding the use of these appliances. A committee of experts has evolved the handbook, which it is hoped will prove instructive to employers, and ensure greater safety to those who are called on to handle the ropes. Drawings of rope slings and tackle accompany the descriptive text.

Sharpening Ardoloy Tools.—Alfred Herbert Limited, of Coventry, has produced a new publication on the grinding of tools made from Ardoloy, the high-speed cutting alloy made at the Rugby works of the British Thomson-Houston Co. Ltd. The booklet has several illustrations and drawings showing how to sharpen Ardoloy tools; they are intended to supplement the instructions and hints in the text. Copies of the publication may be had on request from the firm.

THE SCRAP HEAP

NORTHERN LIGHTS

The L.N.E.R. has already arranged 51 day, half-day, and evening excursions from the Midlands and Eastern Counties to Blackpool for the autumn illuminations.

* * *

Seven million railroad sleepers will be required on the Canadian National Railways during 1939; if placed end to end they would make a continuous line 10,600 miles long.

* * *

Railway engineers are working on a revolutionary new system of internal streamlining of boiler tubes and cylinders, which will increase speed of railway locos., and give us 60 m.p.h. goods trains.—*Sunday Newspaper*.

Superheated steam may also be used.

* * *

The L.N.E.R. 119 camping coaches (118 stationary and one touring) have just been spring-cleaned and are now on their sites from Essex to the Western Highlands ready for occupation. All are fully booked for August and some were occupied during the Easter Holiday. To encourage the spread-over of holidays this year the rents of £3 3s. a week are to be reduced for bookings before May 27 and after September 15 to £2 10s.

* * *

At the recent annual meeting in London of the Pedestrians' Association, of which Lord Cecil is President, a resolution was passed asking the Minister of Transport to limit the amount of merchandise transported by road which would be more suitably carried by railway, canal, or sea. It was contended that such a step would help to reduce road accidents, and would lessen the inconvenience to road users of heavy vehicles encumbering the highways.

* * *

For the past three years International Literary Prizes have been awarded in France under the auspices of the Commissaire Général au Tourisme in collaboration with the Centre National d'Expansion du Tourisme, to writers of other countries. This year two similar prizes are again being offered. The first, of fr. 25,000, which may be divided, will be awarded to foreign journalists who have written articles in their own language on France from a travel, spa, or climatic point of view in one or more journals published outside France. The second, of fr. 15,000, will be awarded to foreign authors who have had published in their own language and outside France the best work on the same subject. Work published up to November 1, 1939, is eligible and must be sent before that date to the Commissariat Générale au Tourisme, 27, Quai d'Orsay, Paris, for submission to a jury which will announce its awards

towards the end of the year. A similar prize will be offered by the Office Chérifien du Tourisme (Tourist Office of French Morocco), 25, Rue de la République, Rabat, Morocco, in respect of travel in Morocco.

* * *

Railwaymen have recently been active in the spheres of music and drama. Over three thousand competitors, all of whom were railway employees, their wives, and families, and who ranged in age from six to over eighty, took part in the G.W.R. annual musical festival at Reading. The festival, which was under the direction of Sir Walford Davies, began on March 20, and continued for six days. The programme was planned around the company's timetable, so that every employee, wherever stationed, was able to compete and return home the same night. The fourteenth annual musical festival organised by the L.M.S. Temperance Union was held in Crewe Town Hall on March 25. All grades of railwaymen were represented among the 229 competitors.

* * *

THE SOUTHERN RAILWAY ROAD MOTOR

The Southern Railway road motor parcels vans in London run to a schedule similar to that of the company's electric trains, namely, to a maximum number of hours a day with double-shift drivers. They carry anything from dogs in boxes to fruit and flowers, and their home station is

Waterloo, to which they return during their brief rest period for washing and maintenance. Below is a typical working schedule of a 2-ton Bedford:—

8.0 a.m.	Petrol and water supplies obtained.
8.30 "	Waterloo to Postal Area W.1—deliveries and collections.
1.0 p.m.	Return to Holborn Viaduct.
2.15 "	Holborn Viaduct to Cannon Street—transfer traffic.
2.45 "	Cannon Street to Holborn Viaduct, ditto.
3.0 "	Holborn Viaduct to Marylebone and Paddington, ditto.
4.15 "	Collections in Harrow Road district.
4.35 "	Return to Holborn Viaduct.
4.45 "	Holborn Viaduct to Cannon Street—transfer traffic.
5.0 "	Cannon Street to Holborn Viaduct, ditto.
5.15 "	Holborn Viaduct to Paddington, ditto.
6.0 "	Collections from Broadley Street office, L.N.E.R.
6.30 "	Return to Holborn Viaduct.
7.15 "	Holborn Viaduct to Charing Cross and Victoria—transfer traffic.
8.0 "	Victoria to Euston and West End. Special deliveries.
9.30 "	Euston to Victoria—transfer traffic.
11.0 "	Victoria to Euston, ditto.
12.0 mdnt.	Euston to Victoria, ditto.
2.0 a.m.	Victoria to Euston, ditto.
3.0 "	Euston to Victoria, ditto.
3.45 "	Victoria to Waterloo, ditto.
4.30 "	Waterloo to King's Cross, ditto.
5.15 "	King's Cross to Waterloo, ditto.

* Transfer traffic consists largely of traffic from one section of the Southern Railway to another, and from the Southern Railway system to the other companies' systems

One Hundred Years Ago

Extracts from the May, 1839, issue of "The Railway Magazine" (afterwards "Herapath's Railway Journal") and the oldest constituent of THE RAILWAY GAZETTE

North Union Railway.—We understand the traffic on this line is beyond all previous conception, and that it will be about one of the best paying lines in the kingdom.

Railway increase of Travelling.—The following are some of the effects of railways in increasing travelling. Between Stockton and Darlington, before the railway was established, there travelled per annum, 4,000 persons, now 16,000; between Bolton and Preston, 15,600, now 130,000; between Dundee and Newtyle, 4,000, now 50,000; between Brussels and Antwerp, 75,000, now 1,200,000. Between Paris and St. Germain, the railway travelling itself increased from 91,000 to 130,000, within the space of 12 weeks.

Great Western Railway.—The operations on this line have been continued with increasing energy and effect since we last adverted to them, and great activity now prevails in every department. During the last month the traffic on the line to Maidenhead has been steadily improving, the weekly re-

ceipts, as we understand, amounting to about £1,500 and the number of passengers to upwards of 1,100 daily. It is a very common thing for the trains to run the 22½ miles to Maidenhead in 45 to 50 minutes, including stoppages.

Leipsic and Dresden Railway.—This line was opened on the 8th ult., when the King and Queen were present.

Birmingham Railway.—A handsome massive silver inkstand, weighing about 120 ounces, was presented to Captain Moorsom, lately one of the secretaries, by officers of the line, in token of their personal regard and esteem, on his retirement from the office of secretary.

Llanelly Railway.—This line will be opened from Llanelly up to Llandibie, 16 miles, by July 1, and the mineral produce abounding in this district will be brought down to the harbour in great quantities. Two splendid locomotives, by Hackworth, of 6 wheels each of 4 ft. diameter and all 6 coupled, with 15 in. cylinders, and each engine weighing 11 tons, will be used.

OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

ARGENTINA

Half-yearly Returns

The railway returns for the first six months of the present financial year indicate that a slight improvement took place in December, although, taken in the aggregate, the gross receipts are still substantially lower than those for the corresponding period in 1937. Passenger and miscellaneous receipts are still on the down grade, but goods receipts during December showed an increase of \$1,357,000 paper over the corresponding month of 1937. Despite this relative improvement, however, the working results for the first half of the 1938-39 financial period afford small ground for satisfaction. The receipts of all the privately-owned railways in aggregate show a decline of \$14,731,000 paper, or 7.4 per cent., as compared with the corresponding period last year, the British-owned lines having suffered to the extent of \$12,745,000, or 7.2 per cent. The total receipts of all the companies amounted to \$183,241,000 paper, of which \$123,182,000 were from goods and \$40,237,000 from passenger traffic. The corresponding figure last year was \$197,972,000, and both goods and passenger receipts declined by 9.1 and 2.4 per cent., respectively. The appended table shows the gross receipts for the various lines during the period under review, as compared with that of 1937-38:—

	First half year		Incr. or Decr.
	1937-38.	1938-39.	
	\$ Paper	\$ Paper	\$ Paper
B.A.G.S.R. and subsidiary lines	55,177,000	55,198,000	+ 21,000
C.A.R.	58,286,000	48,425,000	- 9,861,000
B.A. & P.R.	34,289,000	32,133,000	- 2,156,000
B.A.W.	19,888,000	17,923,000	- 1,965,000
Entre Rios	6,091,000	7,029,000	+ 938,000
Argentine North Eastern	4,308,000	4,586,000	+ 278,000
Total receipts of British companies	178,039,000	165,294,000	- 12,745,000
Santa Fé Provincial	7,366,000	7,300,000	- 66,000
Compañía General	6,723,000	5,375,000	- 1,348,000
Central de Buenos Aires	3,451,000	3,033,000	- 418,000
Rosario-Puerto Belgrano	2,393,000	2,239,000	- 154,000
Total for all companies	197,972,000	183,241,000	- 14,731,000

According to the statistics furnished by the Instituto de Estudios Económicos del Transporte, goods traffic dropped from 18,022,000 tons for the first six months of the 1937-38 period to 16,142,000 tons in 1938-39, a reduction of 1,880,000 tons, or 10.4 per cent. On the other hand, the number of passengers increased from 74,766,000 to 77,965,000, an increase of 3,199,000, or 4.3 per cent.

Central Argentine Wins Lawsuit

An important legal decision regarding the exemption of the railways from the payment of taxes for street cleaning and lighting has just been made by the Argentine Supreme Court. The decision was the outcome of a law-

suit brought by the Municipality of La Banda in the Province of Santiago del Estero against this company for the payment of the sum of \$59,239 paper in respect of taxes and fines levied for the above-mentioned services performed in the vicinity of the company's station and precincts. The railway contested the case on the grounds that it had no legal obligation to pay these taxes and that the municipality's action was therefore inadmissible. This view was upheld by the Supreme Court which, in giving judgment for the company, pointed out that the exemption of the railways from taxes of this nature was amongst the privileges granted to them under the Mitre Law, and added that the local authorities had no reason to complain of this, as they were amply compensated by the benefits which the railways had brought to the provinces and towns they served, in the shape of higher land values and increased municipal revenues. This decision of the Supreme Court also applies to a number of similar cases in regard to which litigation is pending between the Central Argentine and B.A.G.S.R. and various provincial municipal bodies. For some time past there has been a noticeable tendency on the part of the municipal authorities of some of the smaller provincial towns to make unwarrantable demands upon the railways in regard to taxation as well as other matters, and this rul-

are the basis of Bills now being weighed by the Congress.

In addition to numerous minor recommendations, the committee-of-six called for the setting up of a new Government board, in addition to the Interstate Commerce Commission, which would be given the power of veto over all new construction of transport plant (waterways and trunk highways as well as railways). Some of the railway managers are opposed to this recommendation, on the ground that one transport regulatory board is enough. They are also opposed to the committee-of-six proposal that a new court be established with sole jurisdiction over recapitalisation of railways in receivership.

One of the most powerful of the trades union leaders (Mr. A. F. Whitney, President of the Brotherhood of Railroad Trainmen) had already announced his opposition to the railway and trades union programme. The defection of some of the railway managers thus renders the transport picture in America even more chaotic than it was before. With such a multiplicity of companies and trades unions, agreement is most difficult.

Owing to the traders opposing any new regulation of water transport concerns, and the joining of those concerns with the road hauliers in defence against any legislation which would reduce their favoured position, the likelihood of any early amelioration of the railway situation by legislation appears unlikely.

Net Revenues

Meantime, the railways are stationary at a depressed level of traffic and revenues. In the first two months of the year, net revenues (after taxes but before bond interest) were £10,258,000. Such a rate of earnings, if continued throughout the year, would yield the railways as a whole less than the sum required to pay interest on their bonds, with nothing whatever for shareholders. Nevertheless, bad as these earnings are, they are much better than the bare £1,047,000 earned in the first two months of 1938.

A recent questionnaire sent out by the Interstate Commerce Commission brought replies which disclose that railway maintenance work, at the end of 1938, was £56,764,000 in arrears. Giving consideration to these figures in connection with the current low earnings reports, it is evident that the railways' plight is even worse than is generally recognised.

The Silver Lining

On the other hand, current carloadings are averaging 15 per cent. or more above those of last year. Passenger traffic prospects are the brightest for several years, thanks to the New York and San Francisco fairs, to which attractively low rates will come into effect at the end of April. Purchases by the railways of new rolling stock, while still low, are much more exten-

ing of the Supreme Court will therefore be welcomed by railway executives as showing that the judiciary is determined that the legal rights and privileges of the companies shall be duly respected and safeguarded.

UNITED STATES

Railroad Managers Fail to Agree

Dissension has developed among railway managers over the transport reform proposals of the so-called "committee-of-six" (three railway managers and three trade union leaders). The committee-of-six proposals supposedly reflected the unanimous agreement of the railways and their employees and

sive than they were last year, the first quarter's orders totalling 55 steam locomotives (all of them large) and 8 diesel-electrics, 1,000 freight cars, and 60 passenger cars. Nearly 406,000 tons of rails were ordered in the first quarter of the current year, as against less than 128,000 tons in the same period of 1938.

SOUTH AFRICA

Tourist Development Corporation

The first board of the Tourist Development Corporation—referred to in THE RAILWAY GAZETTE of March 3, 1939—has now been appointed. Mr. D. M. Robbertze, Manager of the S.A.R. & H. Publicity and Travel Department, is Chairman, and the other members are: Commander C. P. Newton, Manager of the Cape Peninsula Tourist Bureau; Professor A. J. Norval, a member of the Board of Trade and Industries; Mr. H. J. Crocker, Director of Publicity in Johannesburg; Mr. H. O. B. Grant, representing the Knysna district; and Mr. A. M. Campbell, representing the Union-Castle Mail Steamship Company. A special sub-committee has already drawn up the constitution of the new body.

Durban Harbour Development

The committee on the future harbour development of Durban, appointed by the railway administration, has now issued its report. The committee is of the opinion that when the facilities at the Point reach their limit for economic and efficient operation, the administration must concentrate upon the head of the Bay for future expansion. The committee is not in agreement with the representations of the Civil Air Board that a civil aerodrome should be constructed at the head of the Bay, being of the opinion that, if it is at all possible, the area should be reserved for industry. In conjunction with the reclamation of Bay lands, the committee recommends that early steps be taken to canalise the rivers now flowing into Durban Bay. Referring to the future of the Bluff, the report says that the provision of additional facilities, such as the extension of the Bluff quay, is largely bound up with the question of the development of coal and base minerals in South Africa and not general cargo. The present facilities and authorised extensions will meet the requirements of the coal and base mineral trade until further considerable development takes place, and the committee is therefore at present unable to make any definite recommendation in respect of quay extension. It is recommended that the Point should be used as much as possible for general cargo.

Other recommendations of the committee are:—

That no further quay extensions be provided at the Point until full experience has been gained in the working

of the port after the works now in progress and authorised have been completed.

That consideration be given to the replacement of sheds at "D," "E," "F," "G," and "H" berths by structures of modern design. The present sheds are stated to be antiquated and their replacement would increase the capacity of the wharves.

That in connection with the canalisation and other harbour works, careful consideration be given to an early beginning being made with the reclamation of Bay lands.

INDIA

Railway Accidents Inquiry

The judicial tribunal set up to inquire into various recent derailments on the East Indian Railway concluded its investigations by the first week of April. In addition to the Government Inspectors of Railways and the investigating police officers, the tribunal recorded the evidence of several engineers who were passengers on the ill-fated train that met with disaster between Chikaki and Hazaribagh Road.

Mr. J. A. Bell, General Manager of the East Indian Railway, told the tribunal that the inspectors' reports on 131 cases of train-wrecking or attempted train-wrecking in ten years revealed that in only 34 cases was there any suggestion made that railway employees might be implicated. During his tenure of office as General Manager, there had been no organised labour trouble, though there were cases of minor discontent confined to individuals.

Mr. Bell further informed the tribunal that two of the most serious cases of sabotage—apart from the present incidents—occurred in Bihar in 1932. The persons responsible who were brought to book and convicted were with one exception non-railwaymen, nor had they any particular knowledge of the track. These men were released from goal by the Bihar Government about three weeks before the recent accidents.

On the question of measures for the protection of the railway, Mr. Bell said that the maintenance of law and order in areas traversed by the railway was primarily the function of the local Governments concerned, on whose recommendation the railway was prepared to patrol the track for periods. The railway had no permanent system of patrolling.

It further transpired in evidence that the police reported that they considered certain gangmen to have been connected with the Muthroopore accident and recommended to the railway the dismissal of these men. Though the Chief Engineer was not personally satisfied with the allegations, the railway administration got rid of the men as a gesture of co-operation with the police.

Mr. H. E. Marriott, Chief Engineer, East Indian Railway, also gave the tribunal details of the superintendence

of the permanent way. Explaining the drop in the number of men on the permanent way staff, Mr. Marriott stated that prior to 1930 this staff on the E.I.R. numbered 3.5 men a mile and was considerably in excess of the figure for other first class railways. As a result of careful investigations into the question of economising expenditure on track maintenance, heavy reductions were made in the number of mates, keymen, and gangmen, not haphazardly, but on the basis of an equated track length. Similar economy was effected on other railways, the biggest reduction being on the North Western Railway. Early in 1938, Mr. Marriott had decided to increase the number of keymen, and this decision was put into effect during the year 1938-39. He was not aware of any dissatisfaction among the staff, and as Divisional Superintendent at the time of some of the accidents, he did not recollect having received any representation from the permanent way staff. The railway always employed a large number of temporary gangs. He discounted the suggestion that past or present employees in the permanent way gangs were responsible for tampering with the lines. Engineering gangs were composed of loyal and hard-working men whose conduct on many an emergent occasion was deserving of praise. The Chief Engineer said that no technical knowledge was required for the removal of rails, any man with the slightest mechanical sense could do the job.

ANGOLA

Benguela Railway Results

The following table shows the passenger and goods traffics, gross and net receipts of the Benguela Railway Company during the first quarter of 1939, as compared with the same period in 1938:—

	January-March 1938	January-March 1939	Increase or decrease
Passengers carried	45,553	45,015	— 538
Goods (tons) ...	67,524	76,400	+ 8,876
Gross receipts ...	£68,918	£75,809	+£6,891
Net	£21,398	£25,355	+£3,957

TUNIS

Results of Working in 1938

Traffic receipts of the Tunisian Railways (Compagnie Ferrière des Chemins de Fer Tunisiens) in 1938 amounted to fr. 90,837,807, an increase of fr. 18,144,224 for the year. The increase was due mainly to higher tariffs, as the traffic actually showed a slight decline, the goods tonnage decreasing 8 per cent. Expenditure was increased by the rise in the cost of raw materials and by the payment of an indemnity to railway workers for higher living costs. But the net profit, due in part to more satisfactory returns from the company's private property, amounted to fr. 2,649,709, against fr. 2,302,034 in 1937.

ROUTE MILEAGE OF THE GERMAN STATE RAILWAY

Political changes in 1938 and 1939 have resulted in considerable additions to the route mileage worked by the Reichsbahn

CONSIDERABLE increases in the total route mileage of the German State Railway have resulted from the incorporation of Austria and the Sudetenland in the German Reich and other political and economic changes since the beginning of 1938. The latter changes include the transfer of certain private lines to the Reichsbahn, the chief of which are the Lübeck-Büchen Railway, 160 km. (99 miles); the Brunswick District lines, 108 km. (67 miles); and the Munich District Light Railways, 179 km. (111 miles). The total length of route owned by the Reichsbahn increased in 1938 from 54,522 to 62,932 km. (33,878 to 39,104 miles) or 15 per cent. Of this route mileage some 37,984 km. (23,602 miles), or 60 per cent., are single track; 1,229 km. (764 miles) or nearly 2 per cent. narrow gauge; and 5 per cent. or 3,236 km. (2,011 miles) were being electrically worked on December 31, 1938. As shown in Table I, a great increase took place in the length of private lines worked by the Reichsbahn management, either in the form of rented lines or on be-

TABLE I.—ROUTE MILEAGE WORKED BY THE REICHSBAHN
(The figures are in kilometres, with the equivalent English miles in brackets)

	German territory on Dec. 31, 1937	German territory on December 31, 1938			
		Old Reich	Austria	Sudetenland.	Total
Lines owned by the Reichsbahn ..	54,522 (33,878)	55,032 (34,195)	4,521 (2,809)	3,379 (2,100)	62,932 (39,104)
Private railways worked by the Reichsbahn for its own account	5 (3)	5 (3)	1,175 (730)	5 (3)	1,185 (736)
Railways worked by the Reichsbahn for account of the owners	72 (45)	72 (45)	400 (248)	238 (148)	710 (441)
Totals ..	54,599 (33,926)	55,109 (34,243)	6,096 (3,787)	3,622 (2,251)	64,827 (40,281)

half of the owners. There were only 5 km. (3 miles) of the former type in the old Reich, but some 1,175 km. (730 miles) were added when Austria was incorporated, and 400 km. (248 miles) under the second heading.

The average number of staff employed in 1937 was 703,546; this rose to 846,559 in 1938, an increase of 20.2 per cent. There were also considerable increases in rolling stock, namely, 15 per cent. for locomotives and railcars; 14 per cent. for passenger carriages; and 10 per cent. for goods wagons, exclusive of engineering department wagons. Goods carried in 1937 came to nearly 500 million tonnes and 546 millions in 1938, with the extra territory. Passengers carried rose from 1,808 millions to nearly 2,042. These figures, listed in Table II, include the rented lines worked by the Reichsbahn.

Railways of Bohemia and Moravia

Since the proclamation of protectorates over the provinces of Bohemia and Moravia of the former State of Czecho-Slovakia, the lines therein have come under the

TABLE II.—ROLLING STOCK OF THE GERMAN STATE RAILWAY
(Including private lines worked for its own account)

	German territory on Dec. 31, 1937	German territory on December 31, 1938			
		Old Reich	Austria	Sudetenland	Total
Locomotives ..	21,838	22,133	2,116	878	25,127
Railcars ..	1,762	1,901	121	—	2,022
Passenger carriages	60,629	61,309	5,849	1,784	68,942
Goods wagons (excluding service wagons)	574,996	577,060	30,653	21,980	629,693

general supervision of the Reichsbahn, and are known as State Railways of Bohemia and Moravia. They are managed from the five divisional managements previously existing at Prague, Pilsen, Königgrätz, Brünn, and Olmütz. The transfer of Sudetenland resulted in some 3,622 km. (2,251 miles) of route passing to the Reichsbahn. The lines in the protectorates amount to 5,925 km. (3,682 miles), with 97,386 officials and employees, 704 of whom are engaged in the Ministry of Transport in Prague. The standard-gauge rolling stock consists of 2,323 steam locomotives, 5 tractors, 23 electric locomotives, 262 railcars (including electric motor coaches), 5,723 passenger coaches, 348 postal vans, and 1,547 luggage vans. No particulars are available of the goods wagons on the narrow gauge stock.

Lines in the Memel Territory

The lines in the former Territory of Memel passed to Germany on March 22, 1939, resulting in 138 km. (86 miles) of route being added to the Reichsbahn; the principal section is that between Tilsit and Memel. The single line between Tilsit and Radsiwiliszki crosses the territory for some 22 km. (14 miles). A route mileage of some 134 km. (83 miles) is worked by certain light railways, as shown in Table III.

TABLE III.—LIGHT RAILWAYS IN MEMEL TERRITORY
(The lengths are given in kilometres, with the equivalent English miles in brackets)

	Section	Gauge	Length
Insterburg Light Railways	Pogegen-Schmalleningken	1 metre	58 (36)
	Mikieten-Tilsit (electrically worked) ..	1 metre	8 (5)
	Heydekrug-Kolleschen ..	Standard	14 (9)
	Total	80 (50)
Memel Light Railways	Memel-Pöszeiten ..	1 metre	34 (21)
	Clemmenhof-Plicken ..	1 metre	15 (9)
	Dawillen-Lauggallen ..	1 metre	5 (3)
	Total	54 (33)
Grand total	134 (83)

RAILWAYS AT THE NEW YORK WORLD'S FAIR

Sponsored by the Eastern Railroads of the U.S.A., the combined railways exhibit is the largest in the Fair, and represents not only American but European railways

FOR the first time in the history of the great American exhibitions known as World's Fairs, the railways have combined to demonstrate the greatness of the railway transportation service to the public. The 27 Eastern Railroads of the United States have pooled their efforts and resources, and are spending between £600,000 and £1,000,000 on the largest exhibit at the New York Fair, which was opened by President Roosevelt last Sunday. The exhibit covers an area of 17 acres and includes a vast pavilion centred round an imposing rotunda, and having a floor area of 140,000 sq. ft.; it is decorated externally with five mural paintings and many statues. So large, therefore, is the exhibit, that it is an exhibition in itself.

General Description

It takes the form of four principal spectacles, Railroads in Building, Railroads on Parade, Railroads at Work, and a remarkable collection of the newest American and foreign trains and locomotives and many historical engines and coaches not parading in the pageant, also an old-time station. There is moreover, in the building what is claimed to be the largest display of railway equipment ever collected together at any exhibition. Some of the main spectacles were described in detail in the Overseas columns of our issue of July 29 last, and other descriptions have also appeared in our pages from time to time, notably in editorial notes on January 28 and April 15, 1938, and in the Overseas Notes of May 6. The principal preparations for rail transport to and from the Fair were outlined in our issue of October 28.

Railroads in Building

Railroads in Building is an animated cyclorama demonstrating the actual construction of railways and of their equipment. The cyclorama represents a mountainous landscape 80 ft. at the base and 28 ft. high. From a spiral ramp, built round the animated model, visitors are able to follow step by step the various construction operations from forest clearing to completion. They can see the raw materials carried from the mountain side to the smelters, foundries, and fabricating plants, and timber from tree-felling to final railway uses.

Railroads on Parade

Railroads on Parade is a stage representation and pageant of American transport history from the days of the covered wagon to those of the streamlined *train de luxe*. The outdoor stage is 250 ft. wide and 100 ft. deep and accommodates two standard-gauge tracks for the parade of engines and trains, ancient and modern, broad highways, a performing stage for a cast of 250, and a channel in the background for the review of full-size copies of historical vessels. The amphitheatre to this stage seats 4,000. In sixteen scenes, in period settings and costumes, actors, horses, covered wagons, locomotives, coaches, and ships will play their parts in demonstrating the manner in which transportation has assisted in the opening up of a continent.

Railroads at Work

Railroads at Work is a vast model of the complete working of a modern railway system. Housed in a

separate auditorium seating 1,000, its stage is a great scenic diorama 160 ft. wide and 40 ft. deep. Every detail is reproduced in miniature, including 500 pieces of rolling stock, as fully described in our issue of July 29 last.

British Railways Collective Exhibit

The centre-piece of the exhibit which the British railways, in co-operation with the Travel & Industrial Development Association of Great Britain & Ireland, are providing for the Fair, consists of an ingenious map 10 ft. 6 in. wide by 7 ft. 6 in. deep, on which the land areas of England, Scotland, Ireland, and Wales are represented by superimposed plywood on a pale blue background; 190 thumbnail sketches in colour depict features of interest and landmarks for various localities, and the railway routes are shown in red. Four corner panels bear the arms of England, Scotland, Ireland, and Wales, and the following quotations:—

England:—"This blessed plot, this earth, this realm, this England."

Scotland:—"From scenes like these old Scotia's grandeur springs."

Ireland:—"For dear is the Emerald Isle of the ocean."

Wales:—"Among our ancient mountains and from our lovely vales."

The panels are illuminated from behind, and the lighting is controlled by an automatic fading device. The whole map is floodlit from the front by concealed lights, and has been designed by Mr. Alfred E. Taylor, N.R.D.; the construction, lighting, and mechanical effects have been carried out by the Thorp Studios, Battersea, London, and the production was under the direction of the publicity officers of the British railways.

The outstanding individual British exhibit is the complete Coronation Scot train and engine *Coronation*, illustrated and described in our issue of January 13 last. But in addition, there is the striking working model of Southampton docks, described and illustrated on pages 470 and 479 in our issue of March 17 last. Also, at the entrance to the British Railway & Travel Information bureau, are the fine models of the Coronation Scot (L.M.S.R.), Coronation (L.N.E.R.), Cornish Riviera (G.W.R.) and Brighton Belle (Southern electric) expresses, also described in the issue just mentioned.

Locomotive and Train Exhibits

Among the additional full-size exhibits are to be seen the remarkable 6-4-4-6 type locomotive *American Railways*—illustrated and described in last week's issue—running at speed continuously on a roller bed; the Coronation Scot of the L.M.S.R.; a complete train of electric stock and two electric locomotives from Italy; two large Soviet locomotives, and two from Canada; France, Switzerland, and Poland are also represented. Products of Pullman and Budd rolling stock manufactures are much in evidence in this section of the exhibit, which includes 4,500 ft. of track.

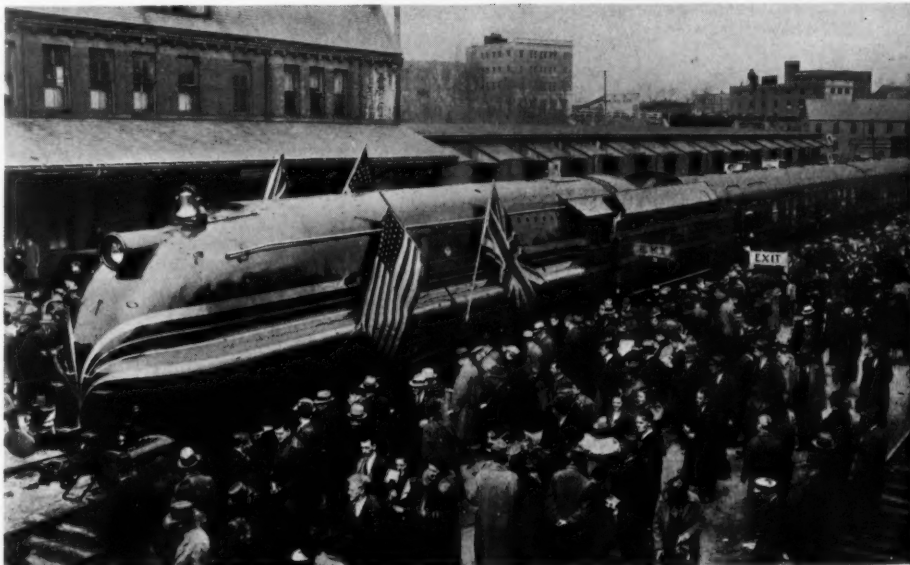
Historic Locomotives

In the old-time station yard and elsewhere are such historic locomotives as the English-built *Stourbridge Lion* of 1829 and *John Bull* (sent to America in 1831, and the first locomotive to run in that country); the first American-



The Railroad Building at the New York World's Fair, which has 140,000 sq. ft. of exhibit space and a frontage of nearly $\frac{1}{4}$ -mile. It is the largest building at the fair

A railway survivor of the American Civil War days on its way to be exhibited at the World's Fair. The locomotive is the "William Crooks," which made its first trip in 1861. Engine and coaches, of the same period, now belong to the Great Northern Railway



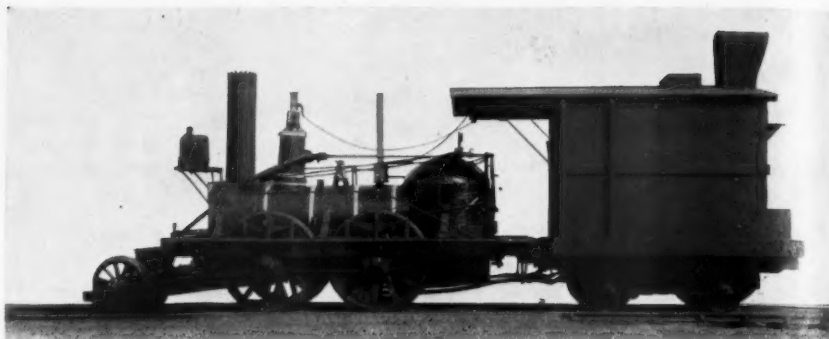
Crowds examining the L.M.S.R. Coronation Scot train at a halt during its tour in America preparatory to being placed on exhibition at the World's Fair

built "commercial" locomotive, *Best Friend of Charleston* (1830); the *Tom Thumb* (1829); the *William Crooks*, pioneer of the former St. Paul & Pacific Railroad—which ran the 1,300 miles from St. Paul to the Fair under its own steam; the *Atlantic* (1832) famed as the first locomotive to enter Washington; the *Thomas Jefferson* (1835); the *Galloway* (1837); the *Ross Winans* (1848); the *General* (1853), veteran of the civil war; the *William Mason* (1854); the *Thatcher Perkins* (1863); the *Pride of the Prairies* (1870); the *Peppersass*, built for the Mount Washington rack railway; the *J. C. Davis* (1875); and the famous New York Central No. 999, which in 1893 made a world record run reputed to have reached 112 m.p.h. Old coaches are on display to revive the story of early travel as compared with today's luxury travel in air-conditioned streamlined trains. These old-timers are either in the pageant or in the old-fashioned station yard reserved for them, but the *John Bull* locomotive is in the rotunda of the Railroad Buildings.

Indoors also there is a remarkable collection of prints and models and of appliances lent and arranged for display by the Railway & Locomotive Historical Society. Railroad service is demonstrated in a series of animated diagrams showing the various services rendered to the public by the railways.

Canadian Pacific Railway Exhibit

A feature of the Canadian Pacific Railway exhibit is a great relief model covering an area of no fewer than 460 sq. ft. and representing 100 sq. miles of the Rocky mountains surrounding Banff Springs Hotel. On it may



The "John Bull" locomotive as fitted in 1832 with pilot wheels. This engine ran in continuous service from 1831 to 1865 and has since appeared at many exhibitions

be seen the town of Banff, also Sulphur Rundle and Tunnel mountains and other famous landmarks; in the background is the new road to the Columbia ice fields. In the foreground are the C.P.R. and on it miniature electrically-worked trains, and motorcars. The lighting is so changed as to represent all times of day from sunrise to sunset. Another part of the C.P.R. display is a moving canvas panorama 140 ft. in length which, as it slowly passes the onlooker, depicts Canada from coast to coast. The cities and beauty spots, which are blended into one another, and in striking colours, have below them a running commentary, and an electrically-worked device throws spot lights upon a map of Canada to indicate where the particular picture above is located. Large photographs and hand-coloured transparencies depict scenes connected with the company's rail and steamship services. The whole of its exhibits are finished uniformly in Canadian maple, inlaid with aluminium bands and in places covered with a highly-finished composite material known as micarta.



POST OFFICE UNDERGROUND MAIL TRAIN: LONDON

A Striking G.P.O. Poster

By courtesy of the G.P.O. we are enabled to reproduce this poster by Miss Lili Réthi vividly depicting trains in a station on the London Post Office tube railway

ROAD TRANSPORT SECTION

This section appears at four-weekly intervals

Some Trolleybus Figures

THE trolleybus as a unit of urban transport has been known for exactly 40 years, as it was in 1899 that Siemens & Halske first demonstrated one in Berlin, but its extensive development is a feature of the past decade, and even now it is regarded in many countries as a feeder to tramways and unsuited to form the main means of conveyance. In the whole of Greater Germany, for example, we believe that there are only some 30 trolleybuses at work—all small vehicles, and divided among six undertakings. Our American contemporary, the *Transit Journal*, recently published a survey of world progress in which it estimated that in all nearly 6,000 trolleybuses are now in service. Great Britain leads with some 2,600; the U.S.A. is credited with approximately 2,000; and 1,300 are divided among the remaining countries. These figures, based apparently on the latest available financial returns, are now an understatement of the British total, which is about 2,800. Far and away the largest single trolleybus undertaking in the world is that owned by the London Passenger Transport Board. At the present time it has 1,135 vehicles operating 227 route-miles, and is thus responsible for one-fifth of the world total of such vehicles. The comparison is even more striking when it is realised that the British trolleybus is usually a double-decker seating about 58, whereas elsewhere the single-decker prevails. In the U.S.A. the average seating capacity is under 30. The London system is, of course, almost entirely the result of tramway conversion. When the L.P.T.B. began working, on July 1, 1933, it took over 327 miles of tram route with 2,560 tramcars, and 18 miles of trolleybus route with 61 vehicles. Today the tramway mileage has dropped to 147, and the tramcar fleet to 1,480. From the meagre information available it seems that Moscow ranks second to London, as it is claimed to possess 570 trolleybuses, of which 10 are double-deckers.

London Motor Licences

AN important part of the work of the Public Control Department of the London County Council is the licensing and registration of motor vehicles. This work formed the subject of a short but informative article in a special L.C.C. Jubilee supplement to *The Times* in which the enormous growth of motor traffic coming within the purview of the council since the Roads Act came into force in 1921 was demonstrated statistically. In 1921, for example, 131,541 motorcar licences were issued in London, yielding a revenue of £1,529,794, whereas for the year ended November 30, 1938, the number of vehicles licensed was 630,430, representing an income of £4,812,326. A motor licence has a surrender value, calculated on the number of complete months of its currency still to run at the time it is given up, and the use made of this right is shown by the fact that 38,550 licences were surrendered in 1938 and that the amount refunded was £256,689. The council's work in this department includes the exercise of control over the issue of driver's licences to residents in London. In the year ended last November 377,230 such

licences were issued and the payment for them amounted to £93,535. The register of driving licences kept at the County Hall, which includes any endorsements ordered by the Courts, comprises some 2,650 volumes containing the names of more than 1,000,000 persons; incidentally, 18 volumes concern persons named Smith. The annual figure of endorsements reached over 20,000 in 1937, compared with fewer than 100 in 1904. Tests for applicants for driving licences are conducted by the examiners appointed by the Ministry of Transport, and the certificates issued by them are sent to the County Council for custody. The extent of the administrative work here involved is shown by the fact that since the tests became obligatory in June, 1935, for all new drivers, over 70,000 certificates have been received by the L.C.C.

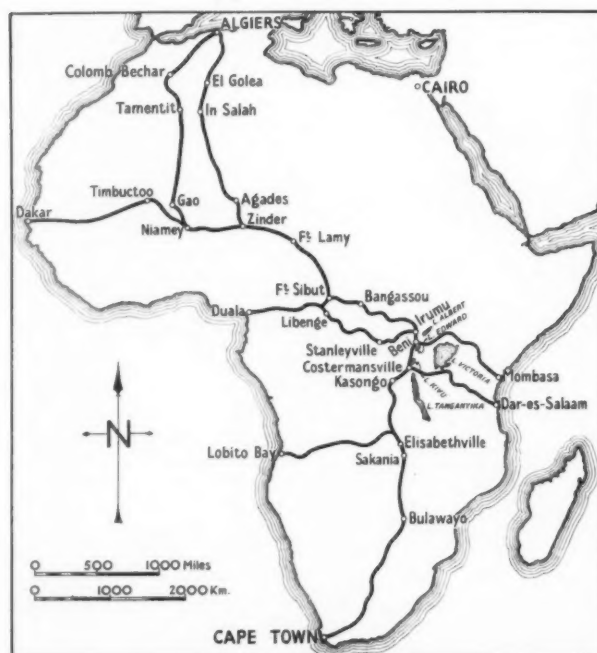
Dublin Transport Progress

A REMARKABLE story of progress within a short space of time was told by the Rt. Hon. James McMahon when he presided at the recent meeting of the Dublin United Tramways Co. (1896) Ltd. Only three years ago he deplored the sadly dilapidated condition of the rolling stock as a whole, which consisted at that time of many worn-out vehicles, the battered remnants of an acquisition. He was now able to announce that the great bulk had been relegated to the scrap heap, and out of 287 buses acquired only 23 now survived. In admitting that the condition of these vehicles, for which the company had no responsibility, constituted a reproach and a discredit to the service, he had said that the directors intended to introduce a new fleet of which everyone could be proud. In the comparatively short interval which had elapsed since then they had succeeded in replacing almost all of those unsightly and unsuitable vehicles by a fleet totalling 317, including 82 double-deckers. The bodies had all been built in the company's own workshops, and they were such that pride could be taken in the clean, smart, and attractive appearance. Of the double-deckers, 56, each with a seating capacity of 56 passengers, were constructed during the year 1938, and the shops had already turned out within this current year a further 24 of the same type. Five years ago the company had but two garages, accommodating in crowded fashion 105 vehicles. Today to accommodate 317 vehicles there were four additional large garages, the adaptation of which to their present purposes had entailed prolonged labour and expense. With regard to peak-hour traffic, the Chairman said it was difficult to put more vehicles on the road, as the company paid in licence duty £120 on the 36-seat single-deckers and £187 on the 56-seat double-deckers. He had no doubt that the extension of officially-arranged stopping places would do much to facilitate regular running, but the directors had a sense of grievance that the estimated cost of these posts, amounting to several thousand pounds, should have to be borne entirely by the company. The posts when erected would be of considerable advantage to all users of the road. They would help to free all road traffic from present delays and reduce existing causes of accidents to the public. The total

working and general expenses in 1938, inclusive of necessary appropriations, amounted to £1,007,046, as compared with £979,177, an increase in expenditure of £27,869. Only six years ago total payments for salaries and wages were £393,000, but last year they had advanced to £619,800. In 1938, despite extremely inclement weather throughout the greater part of the year and an unofficial lightning strike which entailed a net loss to the company of £3,000, the returns showed substantial increases in the total number of passengers carried and in the accrued revenue. The tramcars and buses in 1938 carried 155,221,384 passengers, an increase of 1,340,511 over the previous year, and the receipts totalled £1,162,024, an increase of £48,838. The accounts indicated that the amount available was £96,340. *Ad interim* dividends amounting to £19,065 were paid on August 27, 1938, and the meeting resolved to pay a dividend at the rate of 6 per cent. per annum, less income tax, on the preference stock for the half-year ended December 31, 1938, and a final dividend at the rate of 4 per cent. per annum, less income tax (making 3 per cent. for the year), on the ordinary stock; £20,000 has been set aside towards renewals (general reserve), and £20,000 for mortgage and debenture redemptions. The dividends and sums set aside absorbed £83,245, leaving £13,835 (against £13,095) to be carried to the next account.

Trans-Africa Roads

THE motor highway from Kasongo, on the Upper Congo, to Costermansville, on Lake Kivu (also in Belgian Congo), the completion of which was recorded in our issue of December 16 last, provides the last link in a continuous motor road from Algiers to Cape Town. This route, especially in Belgian Congo, is not direct, and makes use of several roads linking towns in that country. As may be seen from the accompanying sketch map, after entering Belgian territory at Bangassou,



Sketch map showing the through north to south trans-Africa road and its chief branches

the route swings eastwards and then south in the neighbourhood of Lakes Albert, Edward, and Kivu. At Costermansville it turns south-west to Kasongo, on the Upper Congo (or Lualaba) and then south into the Katanga area, crossing the Rhodesian border at Sakania, adjacent to the Rhodesia Railways. There is also an east to west motor road across Africa. It runs from Mombasa round the north end of Lake Victoria, makes common use with the Mediterranean—Cape route of the short stretch from Beni to Irumu, and then goes west to Stanleyville, crosses into French territory at Libenge, and crosses the Cameroons to reach the Guinea Coast at Duala. The Cape-to-Cairo route, the north-south line upon which public attention has been directed for many years, is still not available for continuous traffic either by road or rail. Through communication is possible, however, by the combined use of regular road, rail, and inland water transport, and a correspondent who recently came to England from South Africa by this route describes the facilities in an article on pages 741-4.

The German People's Car

AT the recent motor show in Germany the long expected "people's car" was exhibited under the name by which it will in future be known. Sponsored by the *Kraft durch Freude* (Strength through Joy) organisation of the German Labour Front, it is to be called the *K.d.F. Wagen*. The design is unconventional, but with characteristic German ingenuity many of the desirable features of modern quality cars have been provided in a layout that is simple and cheap from the production standpoint. Thus there are independently sprung wheels and a four-speed gearbox. The engine is an air-cooled four-cylinder horizontally-opposed unit situated at the extreme back of the car, the drive being forwards and over the top of the rear axle through a single-plate dry clutch to the gearbox, then back and *via* a bevel final drive to the differential. The normal engine position under the bonnet is used for petrol tanks and space for a spare tyre. The engine and transmission form a single frame-borne unit and the drive to the wheels is through flexibly-jointed half-shafts in tubular cases making ball and socket connections with the differential housing. At their free extremities these tubes, with the wheel mountings, are constrained to move more or less vertically by radius arms of relatively thin plate. These can twist sufficiently to accommodate such small changes in the inclination to the horizontal of the driving shafts as occur when the wheels follow road irregularities. The radius arms swing about a transverse axis forward of the rear wheels, each being splined to a spring of the circular torsion bar type contained in a tubular cross member of the chassis frame. Further rear wheel springing is unnecessary but hydraulic shock absorbers are provided. Torsion members similarly housed in tubular cross members and having arms at their extremities serve to carry the front wheels, which are not only independently sprung but separately steered; the necessary steering co-ordination is effected inside the steering box instead of by the usual drag link connection. Hydraulic shock absorbers are provided for each front wheel. All brakes are cable operated. The cylinder bore of the engine is 64 mm. and the stroke is 70 mm., so that the capacity is 986 cu. cm. Overhead valves and a compression ratio of 5.6 to 1 enable 23.5 b.h.p. to be developed at 3,000 r.p.m. The maximum road speed is 100 km. an hour, and the grades which can be climbed are 9 per cent. in 3rd speed, 18 per cent. in 2nd speed, and 32 per cent. in 1st speed. There is ample room for four passengers with luggage, and the unladen weight is 650 kg.

Brighton, Hove & District Transport

A survey of the events leading up to the present co-ordinated arrangements

APRIL 1 last was an important date in the history of local passenger transport in the Brighton area, for it was the "appointed day" under the Brighton Corporation (Transport) Act of July 29, 1938. On that day the bus services of the Brighton, Hove & District Omnibus Co. Ltd. (a wholly-owned subsidiary of Thomas Tilling Limited) and the tram services of the Brighton Corporation Transport Department were co-ordinated, and in future the two undertakings will be worked by both parties as a joint undertaking in the proportions of 72½ per cent. to the company and 27½ per cent. to the corporation. These figures will govern the total vehicle mileage provided and the division of gross receipts, each party paying its own running costs. On the same date the Brighton Corporation placed in service the first 10 units of its motorbus fleet, and the Lewes Road to Seven Dials trams were withdrawn, but the latter did not affect the tram route mileage, as other services traverse these lines. The first tramway route abandonment took place on April 26 when the Dyke Road trams were withdrawn and replaced by buses, and the vehicles of the Southdown Motor Services Limited working over this section from outlying places were co-ordinated as to times and fares.

The urban districts of Brighton and Hove have never been the scenes of lasting or intensive competition among local transport agencies, and for many years past there has been a fair measure of agreement among the operators—both company and municipal. The present complete scheme, however, has not been brought into being without considerable difficulty, and a brief historical survey is necessary in order to understand the position. Brighton, in common with other large towns, was served by local horse buses during the second half of the nineteenth century, but, unlike many other districts, had no tramways in the horse era, excepting a line from Hove to Shoreham which was opened on July 3, 1884, and was worked for a time by steam locomotives and subsequently by horses. At the end of last century the bulk of the local bus trade was in the capable hands of the Brighton, Hove & Preston United Omnibus Co. Ltd., a company which had been incorporated on September 12, 1884, to merge the business of various small proprietors.

The Tramway System

In 1900 Brighton Corporation secured powers to construct an electric tramway system, the general plan of which was a series of lines radiating fanwise from the sea inland. Lines have never been laid from east to west, and by friendly arrangement this traffic has been left to the buses, while the trams have had a virtual monopoly of the radial routes. The main portion of the system was opened on November 25, 1901, from a centre at the south end of Victoria Gardens; the central terminus was extended southward to the Old Steine on November 7, 1903; the line (just abandoned) from Seven Dials to Dyke Road terminus on June 26, 1904; and the Station route (completing the system) on July 27, 1904. After the war Brighton Corporation obtained a Light Railway Order (in September, 1920) for a half-mile Lewes Road extension to serve the new housing estate at Moulscombe, but the powers were not exercised.

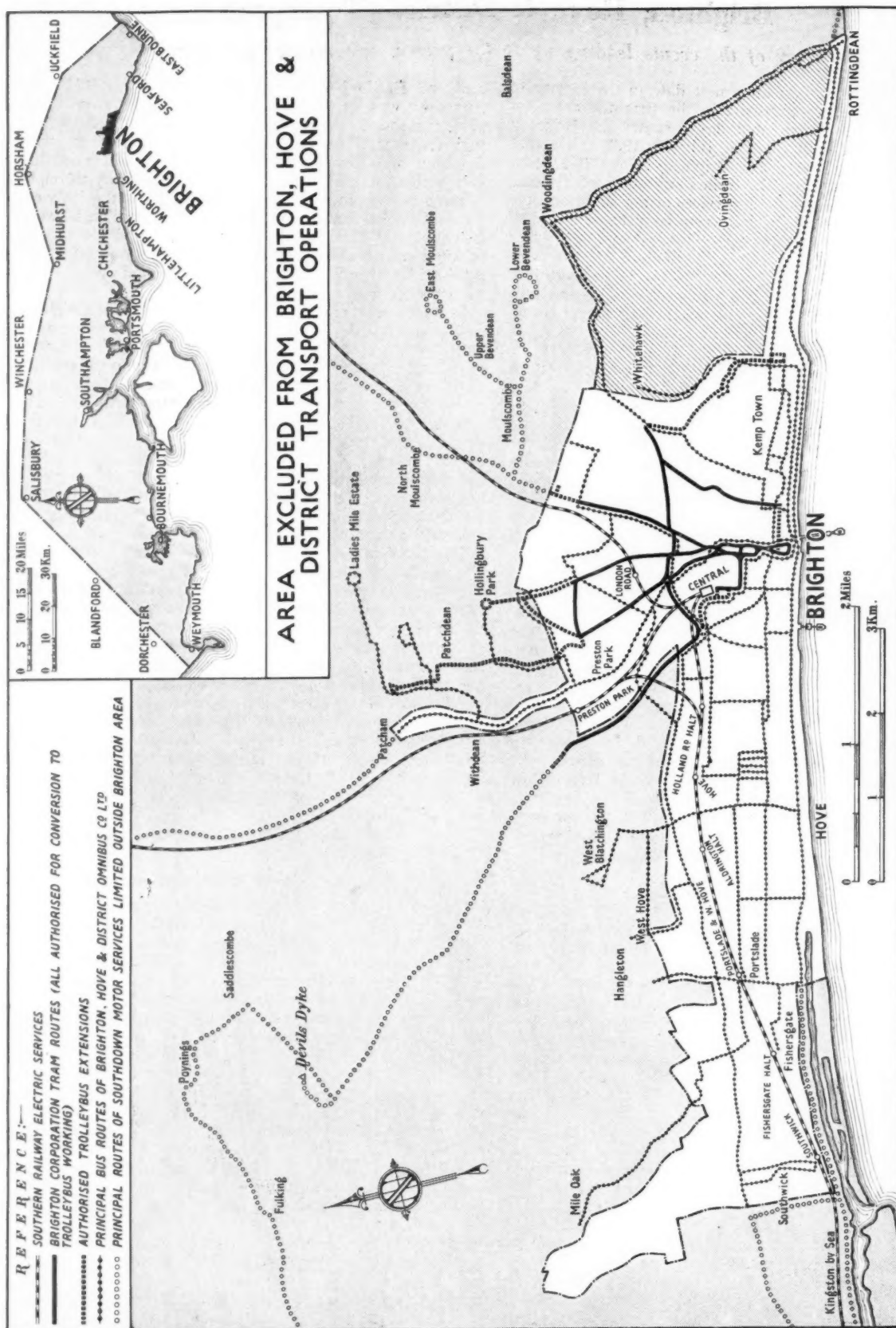
The B.H. & P. Company obtained a Milnes-Daimler petrol bus in 1902 for experimental purposes, and in January, 1904, began regular motor services. Battery vehicles were secured in June, 1908, and in the summer of 1910 the fleet comprised 16 battery buses, 22 petrol buses,

and one Hallford-Stevens petrol electric. In 1911 the company was granted Parliamentary powers to equip various routes for trolleybus operation, but a 1912 application for extensions was withdrawn by agreement with Brighton and Hove Corporations, each of which in that year secured its own trolleybus Act. Compulsory through-running powers into the area of the other authority were imposed by Parliament, and differences of opinion between Brighton and Hove as to the type of installation to be adopted caused some delay. The intervention of the war prevented the trolleybus scheme being carried out, and the powers eventually lapsed in 1931.

The motorbus era brought a newcomer to the Brighton area, namely, the Worthing Motor Omnibus Company, which began a service in 1905 between Worthing, Shoreham, and Hove. This stopped at the Brighton boundary as Brighton Corporation refused to license it. That company was absorbed by the Sussex Motor Road Car Co. Ltd. in November, 1905. In the following year the licensing difficulty was met by extending the service to private premises in Brighton. Towards the end of 1908 the Sussex company failed financially, and the remnants of the business were taken over in April, 1909, by a new undertaking called the Worthing Motor Services Limited. Meanwhile the B.H. & P. Company had begun its own Brighton—Worthing motorbus service in July, 1907. Ultimately the officials of the two companies reached an agreement in 1912 that the Worthing undertaking should retire from the Brighton—Worthing service, but should receive 5 per cent. of the gross receipts of the B.H. & P. Company on this route. The Worthing Company's buses thus released were placed on the Brighton—Newhaven—Seaford service, under an arrangement whereby the B.H. & P. Company was to have 5 per cent. of the gross receipts in recognition of its prior claim to the Brighton—Rottingdean section. During the war the Southdown Motor Services Limited was formed (it was incorporated on June 2, 1915) to merge the various long-distance bus services along the South Coast. It acquired, *inter alia*, the whole business of the Worthing Motor Services Limited, and the country services of the B.H. & P. Company.

Tilling and Corporation Agreements

Thomas Tilling Limited entered the field in Hove with 12 petrol-electric buses that were licensed in February, 1915, and for a short time there was local bus competition. On November 28, 1916, however, Tilling bought for £44,000 the local services of the B.H. & P.; previously the longer services had been taken over by Southdown Motor Services Limited, and an agreement concluded defining the territorial limits of B.H. & P. and Southdown activities. Tilling assumed this agreement, and was therefore free to develop the town services of Brighton and Hove without fear of Southdown competition. The provisions of the Local Government (Emergency) Act, however, prevented new routes being opened up until after the war. In the meantime, overtures were made with the Brighton and Hove Corporations in order to avoid unnecessary competition, as both corporations then possessed motorbus and trolleybus powers. The overtures were successful and the terms of an agreement were reached, but the document was never signed, although the arrangement was observed. This agreement provided that, for a period of seven years from July 1, 1919, Tilling would pay each corporation an annual sum of £40 a



vehicle in respect of a minimum of 50 omnibuses licensed, and £20 per annum for every bus over that number. The company agreed to provide a service over specified routes, while the corporations agreed not to exercise their own bus powers, nor to lease them to any other party. With the security provided by these arrangements, Thomas Tilling Limited was able to improve materially the efficiency of the services, and the fleet was quickly brought up to 70. The Hove Corporation agreement was subsequently stated in slightly different terms, the company making a "minimum voluntary contribution of £2,000 per annum towards the cost of the upkeep of the roads used by the buses." Both in the amount paid and in other respects, the arrangement was similar to that originally concluded, and the payment carried the implication that the Corporation, as the licensing authority, would take all legal steps possible to prevent new competition. When licensing under the Traffic Commissioners came into being, the commissioners required fare reductions and the discontinuance of these *ex gratia* payments which at that time (February, 1932) totalled £7,000 per annum.

Proposed Transport Board

With the enormous post-war spread of Brighton, and the need for serving new housing estates, both Brighton Corporation and Thomas Tilling Limited felt that certain advantages might be expected from a scheme of co-ordination of all the local traffic in the area. The original scheme was evolved in February, 1929, but was modified in certain respects in the course of the next few months. Eventually, it was proposed to establish a joint board, known as the Brighton, Hove & District Transport Board, to take over the Tilling buses in the locality (about 113 in number), and Brighton's trams, while Hove would supply its quota in cash. The three parties, namely, Tilling and the Brighton and Hove Corporations, would share the net income of the joint undertaking in agreed proportions. The proposed Bill would have sought a monopoly, subject to Southdown Motor Services continuing to maintain its longer routes into the area, charging non-competitive fares. The Southdown Company became an associate of the Southern Railway in December, 1929. The monopoly area was to be from the Red Lion public house, old Shoreham, in the west, to Rottingdean, in the east, and to Waterhall Road, on the main London Road, in the north. An exception was to be that the lower road between Portslade and Southwick remained Southdown territory. The scheme was generally similar, on a smaller scale, to that of the London Passenger Transport Board, then under consideration for the Metropolis, but with the fundamental difference that all the proposed participants were to enter on "agreed" terms and not compulsorily. By the end of 1930 the plans had taken final shape and required only the formal consent of the Tilling shareholders and of the Brighton ratepayers before a Bill was promoted in Parliament. The sanction of the Hove ratepayers was obtained, but the Brighton ratepayers rejected the proposals when a poll was taken and the scheme was dropped.

Proposed Operating Company

During 1931 the Brighton Tramways Committee recommended the establishment of a municipal bus service, and suggested that negotiations should be opened with a view to acquiring the Tilling bus services. The General Purposes Committee of Brighton Corporation, however, considered that further conversations should be held with the object of including Brighton and Hove Corporations and Thomas Tilling Limited in a joint scheme. By January, 1932, the main heads of a new agreement between Brighton Corporation and Tilling were formulated. The proposal was that a new limited company with a

nominal capital should be formed by Tilling to work the combined undertaking. Two directors would be nominees of Brighton Corporation and three of Tilling; provision would be made for subsequent enlargement of the board to include Hove Corporation representation. The new company would take over the Brighton Corporation Tramways and the Tilling buses; work them as one undertaking; and divide profits (after allowing for working costs, interest on capital, depreciation, obsolescence, and reserve) in the proportions of 30/85ths to Brighton Corporation and 55/85ths to Tilling. Tramway abandonment was envisaged. The title of the new company was to be Brighton & District Passenger Transport Limited. The draft agreement was approved in October, 1932, by Brighton Corporation, and in March, 1933, Hove Corporation decided to take the necessary steps to enable it to become a party to the scheme. In July of that year the Ministry of Transport held an inquiry into the proposed merger, but after a poll of ratepayers had expressed its disapproval the Minister rejected the plans.

In 1934 Brighton Corporation considered a scheme for a joint public transport authority to take over all local transport in the area, but this idea was not pursued, as it was felt that opposition would be so strong. During 1935 the Corporation decided to seek extensive trolleybus powers, and encountered such opposition before Parliament that the Bill was rejected in May, 1936. By this time the local Tilling services had been turned over on January 1, 1936, to a wholly-owned Tilling subsidiary named the Brighton, Hove & District Omnibus Co. Ltd., which was incorporated on November 26, 1935. Early in 1937 Brighton Corporation rejected a motion to promote another trolleybus Bill, and in May of that year the prolonged negotiations resulted in the present scheme.

The Present Co-ordination Arrangements

The terms arranged between the two parties were set out in a comprehensive agreement dated December 7, 1937, and this was confirmed by the Brighton Corporation (Transport) Act of July 29, 1938; the agreement is a schedule to this Act. It provides for the establishment of an advisory committee consisting of three Brighton Corporation nominees and three B.H. & D. Company nominees; for the early abandonment of the Brighton Corporation Tramways; for the equipment of such routes (excepting Dyke Road) for trolleybus operation within three years of the appointed day; and for the installation of trolleybus gear between Race Hill tramway terminus and Marine Parade *via* Manor Way within five years. The company is responsible for the traffic management and supervision of the combined services, of which the receipts are to be pooled and divided into the proportions, of 27½ per cent. to Brighton Corporation and 72½ per cent. to the company. The vehicle mileage worked by the respective operators is to be divided into the same proportions. So that each party engages to a substantial extent in both bus and trolleybus operation, it is provided that Brighton Corporation shall maintain approximately 20 per cent. of its total miles with buses. The company is to provide approximately 20 per cent. of the total miles run with trolleybuses. The Dyke Road route may not be equipped for trolleybus working without the consent of both parties. All trolleybus equipment will be the property of Brighton Corporation (which the Act gave the necessary statutory powers) and the company will pay rent for its use by the company trolleybuses. To avoid competitive services and to protect Southdown Motor Services Limited, the Act provides that the area shaded on our map (opposite) is not available to either the Corporation or the B.H. & D. Company without the consent in writing of the Southdown Company.

Road Transport as a Railway Ancillary Business

This is the second of a series of articles dealing with the ancillary businesses of the British railways in 1938

THE magnitude of the direct interest which the British railways have in freight road transport may be judged from the following particulars of the companies' fleets of parcels and goods road vehicles and horses at the end of 1938:—

Company	No. of vehicles				Capital expenditure	Horses for road vehicles
	Motors	Horse wagons and carts	Miscellaneous	Total		
G.W.R.	2,410	2,930	1,061	6,401	1,225,635	1,476
L.N.E.R.	3,767	4,330	1,835	9,932	1,377,836	1,734
L.M.S.R.	3,454	16,629	1,617	21,700	1,510,775	7,351
S.R.	736	934	415	2,085	191,952	602
Total	10,367	24,823	4,928	40,118	4,306,198	11,163

The total of 40,118 vehicles represents an increase of 1,170 compared with 1937, and the total capital expenditure of £4,306,198 includes £112,539 incurred last year. For the most part, this great road haulage organisation is used in connection with the collection and delivery of railborne parcels and goods, but a certain amount of throughout road transport is undertaken, and the financial results of both businesses for the last two years are shown in the following tables:—

ROAD TRANSPORT—ACCOUNT NO. 11

Company	Gross receipts		Expenditure		Surplus		Percentage of surplus to gross receipts	
	1938	1937	1938	1937	1938	1937	1938	1937
G.W.R.	£ 70,077	£ 73,226	£ 56,318	£ 59,378	£ 13,759	£ 13,848	19.6	18.9
L.N.E.R.	203,596	201,744	163,768	162,840	39,828	38,904	19.6	19.3
L.M.S.R.	403,846	408,890	335,820	339,625	68,026	69,265	16.8	16.9
S.R.	24,625	23,703	15,726	17,384	8,899	6,319	36.1	26.7

COLLECTION AND DELIVERY OF PARCELS AND GOODS—ACCOUNT NO. 16

G.W.R.	1,012,235	1,038,194	1,259,237	1,278,274	Dr. 247,002	Dr. 240,080	—	—
L.N.E.R.	1,332,035	1,362,669	1,641,784	1,766,518	Dr. 309,749	Dr. 403,849	—	—
L.M.S.R.	2,231,146	2,377,276	2,802,407	2,839,257	Dr. 571,261	Dr. 461,981	—	—
S.R.	534,350	542,975	520,736	532,344	13,614	10,631	2.5	2.0

The throughout road transport of goods invariably shows a satisfactory profit and last year's surplus of £130,512 was £2,176 more than in the previous year. G.W.R. net receipts were slightly less than in 1937 due to an increase of over £300 in the amount transferred to renewal or suspense account. The L.N.E.R. secured an increase of £1,850 in gross receipts, and as expenditure rose by only £930 there was an increase of £920 in net receipts compared with 1937. L.M.S.R. gross receipts declined by £5,000 and working expenses rose by £24,000 due to increased expenditure on maintenance of motor vehicles; this was offset by the transfer of £7,800 from renewal account (compared with a transfer of £18,300 to this account in 1937) and an increase of £1,700 in the balance

of payments in respect of working expenses, with the result that the net profit decreased by only £1,200. The gross receipts of the Southern Railway were £920 greater than in the previous year and expenditure declined by £1,660, with the result that the net receipts showed an increase of £2,580 over 1937.

Only the Southern Railway is able to show a profit on collection and delivery services. The other three companies inevitably sustain a loss, and their total deficit last year amounted to £1,128,012 compared with £1,105,919 in 1937. G.W.R. gross receipts decreased by £26,000 and although there was a substantial reduction in working expenses this was offset by an increase of £17,250 in the amount transferred to renewal or suspense account, with a resultant increase of approximately £7,000 in the net loss. L.N.E.R. receipts declined by £31,000, but the total expenditure was £125,000 less than in 1937, principally due to substantial decreases in respect of horse maintenance, hired cartage, and transfer to renewal or suspense account, and the deficit was consequently reduced by £94,000 or 23 per cent. In the case of the L.M.S.R. there was a reduction of £146,000 in gross receipts; expenditure decreased by £149,000, but the deduction therefrom in respect of cartage for and by other railway companies and accounts was £112,000 less than in 1937, with the result that the net deficit was £109,000 more than in the previous year. The gross receipts of the Southern declined by £9,000, working expenses increased by £34,000 and the deduction in respect of cartage for and

by other railway companies and accounts was £6,000 less than in 1937. As, however, a sum of £42,000 was transferred from renewal or suspense account compared with a transfer of £10,000 to this account in the previous year, there was an increase of £3,000 in the net profit.

Mechanical horses continue to be added to the companies' cartage equipment, and 3,946 of these units were included in the total of 10,367 motor vehicles owned by the British railways at the end of 1938, an increase of 633 compared with 1937. The evolution of the mechanical horse within the last ten years was described by Mr. John Shearman, Road Motor Engineer of the L.M.S.R., in a paper entitled "Commercial Motor Vehicles for Short-Mileage Work: Their Design and Maintenance" presented to the Institu-

tion of Automobile Engineers in November last, extracts from which were published in the Road Transport Section of THE RAILWAY GAZETTE of November 18 and December 16, 1938. Experiments are now being made with a light mechanical horse with a maximum load capacity of 30 cwt. or 2 tons, features of which are an air-cooled twin engine situated approximately in the centre of the underframe, thus permitting of access from either side of the driver's cab, as in the case of the experimental lorry referred to in the previous paragraph.

There is an increasing tendency towards the mechanisation of the railway companies' road transport equipment and the following figures afford some indication of the progress which has been made in this direction:—

	Motors	Horse wagons and carts	Miscel- laneous	Horses for road vehicles
1928 ..	3,421	31,763	489	17,471
1937 ..	9,781	25,075	4,092	12,742
1938 ..	10,367	24,823	4,928	11,163

This policy has resulted in valuable economies and more efficient operation and there will doubtless be further substantial reductions in the companies' stock of horses in the near future. Mechanisation has its own peculiar problems, however, and the events of recent months have served to emphasise the need of alternative fuels for motor vehicles. One substitute which is receiving consideration is producer gas, obtained by converting carbon through

various stages into carbon-monoxide. The essential features of the apparatus are a small furnace, together with a storage tank and cleansing device, and anthracite coal is being used as fuel. The possibilities of electrically driven vehicles are also being explored. A further interesting experiment is being made with a view to finding a suitable lightweight motor for town traffic. This unit consists of a 30-cwt. lorry with a 10-h.p. twin-cylinder air-cooled engine fitted beneath the body in such a way as to give ample clearance. Advantageous features are the easy access for maintenance purposes and the provision of free entrance and exit on both sides of the driver's cab.

The railways are continually being called upon to undertake cartage contracts involving far more than the simple collection and delivery of traffic. Last year, for instance, some of the contracts undertaken involved the placing of large petrol tanks and boilers on prepared foundations, either on level ground or in pits as much as 16 ft. below ground. Such work has to be performed with great precision and the numerous important contracts secured by the railways last year bear witness to the skill and efficiency of the companies' road transport organisations.

In addition to the ordinary collection and delivery work, a widespread system of motor lorry services in rural districts is operated from 2,822 railway stations. The number of road-rail containers in use by the railways at the end of last year totalled 15,500, an increase of 1,700 compared with 1937. Open and closed containers are available for miscellaneous traffic, and ventilated and insulated containers for meat, fish, and fruit, while special types are in use for building materials, furniture, bicycles, and other special traffics.

Publications Received

Mahaffy & Dodson's Road Traffic Acts and Orders—Supplement, 1939. By Robert P. Mahaffy. London: Butterworth & Co. (Publishers) Ltd., Bell Yard, Temple Bar, W.C.2. 9½ in. × 6 in. 157 pp. + 8 pp. index. Price 7s. 6d. net.—This supplement brings up to February 1, 1939, the statute and case law on road traffic. The necessity for it is very real, because since the publication in May, 1936, of the second edition of Mahaffy & Dodson's Road Traffic Acts and Orders, several important road traffic cases have been decided in the High Court and the appellate courts, and the Traffic Appeal Tribunal has given numerous decisions on licensing. Four Acts of Parliament touching the subject have been passed and provisions in the Finance Acts, 1936, 1937, and 1938, alter the duties on certain vehicles. The Minister of Transport has issued over fifty new regulations, including the new Construction and Use Regulations. These, if still in force are set out in the supplement, which, read in connection with the second edition, is a most convenient method of giving the latest information on the subject. The first section of the supplement consists of notanda which bring the 1936 edition up to date. The left-hand column of the notanda pages refers the reader to page numbers in the original book. Where a page number does not appear, the text and notes on that page in the 1936 volume remain unaltered. In the second section are given the text of the statutes passed and the orders issued since May, 1936, as well as some relevant sections from the Finance Acts, 1936, 1937, and 1938.

Code de la Co-ordination des Transports ferroviaires et routiers (Code for the co-ordination of rail and road transport). Published by the Review *France-Transports*, Paris (8e), 71, Boulevard Haussmann. 12½ in. × 9½ in. 140 pp. Price fr. 35.—This code for transport co-ordination in France has received the seal of official approval in the form of a preface by M. Anatole de Monzie, Minister of Public Works. The editor has achieved the difficult task of simplifying the complex series of co-ordination laws, Decrees, and regulations, which have come into force since April 19, 1934,

the date of the first of these measures. He has taken as the basis of this code the two latest Decree-laws, one dated November 12, 1938, and the other January 12, 1939. These two Decrees, drafted under M. de Monzie's direction, abrogated previous conflicting measures, and simplified and supplemented preceding regulations to form in fact a kind of codification of co-ordination to date. *France-Transports* in its code presents these two basic Decrees, article by article in parallel columns, while a running commentary is given in a third column on the opposite page. A wide space is left blank for notes and additions, so that new regulations may be entered and the code kept up to date. An alphabetical index ensures easy reference to any co-ordination regulation on which information is required. In addition, there is a complete list of all the co-ordination committees of the Ministry of Public Works, with the names and addresses of the principal officials. This code will render great service to everyone requiring information concerning details of road and rail co-ordination measures now in force throughout France.

Helps to Happy Holidays.—There are 570 pages in this sixpenny holiday guide, published by the Birmingham & Midland Motor Omnibus Co. Ltd., wherein there is presented a mass of topographical information relating to inland and coastal centres all over the country served directly by the Midland "Red" concern or its associates. Midland "Red" territory proper is dealt with in a gazetteer section, and where places of interest are on the routes of "X" (limited-stop) services from Birmingham a route-map and commentary on the journey appear near the relevant gazetteer page. Section II deals with centres accessible by through bookings from Birmingham via Midland "Red" and Associated Motorways, the area embracing resorts as widely separated as Paignton and Scarborough. Those desiring holidays still further afield can patronise the Midland "Red" coach cruises, covering the West Country, the South Coast, the Yorkshire dales and Lake District, and Scotland. There are numerous attractive pictures in all sections of the guide, and three large folding maps of cruise routes and regular services. A list of hotel and boarding house accommodation completes the usefulness of a well-planned publication.

Modern Coachbuilding Practice

*Equipment and procedure at a well-known Midland works
for the production of composite and all-metal coaches*

SINCE the beginning of this year the coachbuilding activities of the Brush Electrical Engineering Co. Ltd. have been carried on by a newly-formed subsidiary—Brush Coachwork Limited—whose premises adjoin those of the parent company at Loughborough. An inspection by press representatives of the new works was reported in

work strengthened by steel flitch plates concealed in grooves cut inside the visible timber components. Rail tracks run down each bay of the shop, the bodies proceeding along them through the various stages of erection, including glazing and exterior panelling. They are then passed forward to the chassis mounting and paint shops, where



General view in the saw mill

our issue of January 20, and we are now able to give more detailed particulars of the installations and constructional practice of the enterprise, which carries on the 50-year-old traditions of the former Rolling Stock Section of the Brush Electrical Engineering Co. Ltd.

Composite Construction Bodywork

Brush vehicle bodies are of either composite or all-metal construction. In the composite type timber plays an important part. Supplies are stacked for natural seasoning in the company's extensive timber yards, housed in steel sheds with open ends to allow free circulation of air. Before seasoning, logs are cut into separate planks but are stacked in their original formations. After being seasoned, the wood passes into the saw mill, where new machinery has been installed to handle with the maximum efficiency the requirements of the body-building shops. Composite construction bodies consist of an oak, ash, or teak frame-

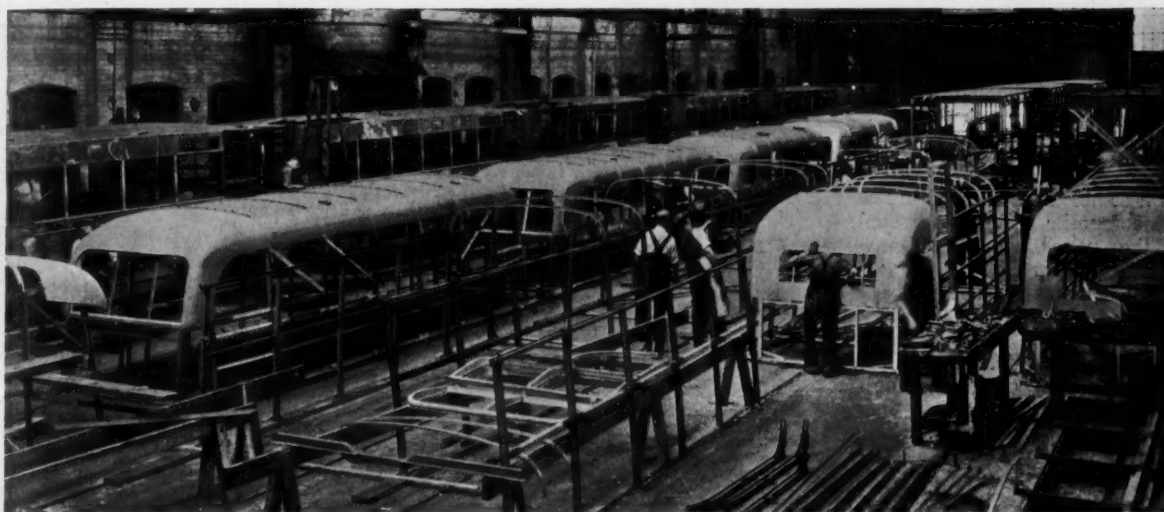
they join the bodies coming from the all-metal body shop for completion.

All-Metal Bodies

It is of interest to note that the first bus of all-metal construction exhibited at the first commercial vehicle show held in London in 1907, was built by Brush. Today the company has at Loughborough a special metal-work engineering shop, equipped with modern presses and other machinery. The vehicle construction consists of a patented rolled pillar section of high tensile steel—crossbars of $\frac{1}{2}$ -in. pressed steel section and roofsticks of a similar pressed steel section. There have been specially embodied in this construction the inner lining panels which proved so successful in Brush tramcar design, for which the company holds a number of patents. All components for building up the complete construction are produced by the use of specially designed jigs to ensure interchange-



Composite body shop



All-metal body shop



Finishing a composite body



All-metal construction in progress



Various types of bus body in the paint shop

ability of like parts. The components are passed from the metal-work engineering shop to the extensive all-metal body building shop.

Final Stages of Production

On completion, Brush all-metal and composite bodies are passed to the panelling and chassis-mounting department for attachment to chassis and interior panelling and flooring. General fitting and furnishing is carried out when the vehicles pass on to the paint shop, where the painting process involves the use of ten priming, filling, and finishing coats, applied by brush or modern spray methods. The fittings, seating, upholstery, decorative mouldings, and other details with which the bodies are equipped in the paint shop are prepared independently in the finishing, polishing, and trimming shops. From the paint shop, the buses are driven out complete for general inspection and testing, which includes water test, tilting test,



A section of the polishing shop

weighing, and other tests to conform with Ministry of Transport regulations, so that they are in effect ready for service.

G.W.R. School for Road Motor Drivers

A training school for Great Western Railway road motor drivers has just been opened near Taplow station. The announcement that this was being laid out was made on page 229 of our July 29, 1938, issue, so that the completion of the arrangements has taken only nine months. The school consists of a class room for instructional purposes, mess room, garage, and a system of roadways. The last-named includes a specially-prepared skidding patch; various types of road junctions for turning and backing; gradients; and portable lights and road signs so that drivers will become accustomed to their use before going on the public highway. A permanent instructor is in charge of the school to superintend the practical and theoretical side of the training and to give lectures on

road sense; avoidance of accidents; the care of vehicles; and complete understanding of the highway code. The classroom is fitted out with blackboards, road signs, charts, diagrams, and sectional units for demonstration purposes. The men will be instructed in the use of three principal types of commercial vehicles, namely, the light motorcar, the heavy motorcar, and the articulated lorry. The training will extend from a week to a fortnight. It is expected 150 to 200 drivers, recruited from the G.W.R. staff in London, Birmingham, the Midlands, and parts of the West of England, will pass through the school annually. Reference to the considerable care taken by the British railway companies in training the drivers of their motor delivery vans and motor lorries was made in a note published on page 688 of our Road Transport Section for October 21 last.

CAPE TO CAIRO OVERLAND

Road, rail, and inland water transport combine to make through communication possible

By J. F. MARR

IN the Golden Age of railway planning, the completion of a Cape-to-Cairo railway system was looked upon merely as something dependent on time and money. It was part of Cecil Rhodes's dream of Empire, the steel thread which would bind closer the scattered colonies, facilitate transport and settlement, and help to open up the interior of Africa. Such a colossal enterprise could not, of course, have been planned as an entity; it was expected to grow, as the railway links between London and Edinburgh have grown, from the merging of inde-

*Rhodesia Railways goods train at Victoria Falls station*

pendently promoted sections. By 1900 many of these sections were in existence; the Cape Colony, the Transvaal, Rhodesia, British East Africa (now Kenya), the Sudan, and Egypt all having considerable mileages open to traffic. Many sections, however, such as the main line of what is now the Kenya & Uganda Railways, opened from Mombasa to Kisumu in 1901, ran across, rather than along, the general direction of the hoped-for "main line."

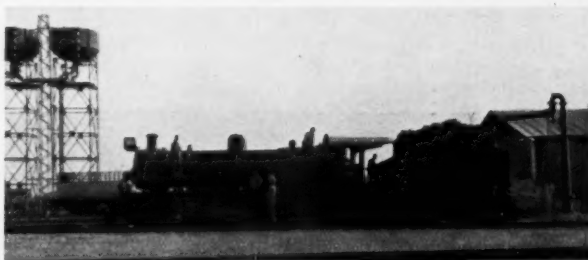
The completion, in 1905, of the famous bridge over the Zambesi just below the Victoria Falls, was an important addition to the chain, linking Northern and Southern Rhodesia, and giving access to the mines at Broken Hill and the great "Copper Belt" round N'dola and N'kana, on the borders of the Belgian Congo. It is probable that during this period (1904-1914) prospects of joining the two ends of the continent by rail were at their brightest. The great war naturally put a stop to any construction except for strategic purposes, and an example of this was the linking of the Kenya & Uganda Railways at Voi with the Tanga-Moshi-Arusha line of what are now the Tanganyika Railways. With the rapid development of air and road transport, plans for railway extensions receded into the background, though even in recent years many new and important lines have been opened. Nowadays, overland travel from Cairo to the Cape, or *vice versa*, automatically suggests air travel, and few people realise that it is quite possible to do the whole trip by train, steamer, and railway-operated road-motor services.

Having recently travelled over several parts of the "surface transport" route, I was able to see how the various railway systems have been linked, and how far the dream of the 'nineties has developed into the reality of today. As "Cape-to-Cairo" has always seemed the natural title for the route (which appears to me a little unfair on those wishing to travel in the opposite direction) so Cape Town becomes the starting point for this description. From here there are three through trains a week to Bulawayo, one of which, connecting with the mailboat

from England, is called the Rhodesia Express, and is rather faster than the other two.

As far as Wellington (45 miles) the line was originally laid to standard (4 ft. 8½ in.) gauge, but when extensions into the interior became necessary the cost of laying standard gauge through the Hex River Mountains would have been prohibitive for the country at that time. It was therefore decided to adopt 3 ft. 6 in. gauge and re-lay the existing line, a decision which the South African Railways of today, with their vast traffic, most bitterly regret. Once through the mountains the line runs across the Karroo; the principal town here is DeAar, the junction for south-west Africa. This is a flat, uninviting country, which, however, is one of the world's finest sheep-rearing areas. From Kimberley, the famous diamond centre, the country consists mainly of open rolling uplands, but north of Mafeking the line runs along the eastern edge of the great Kalahari Desert, through the Bechuanaland Protectorate. The section from Mafeking to Bulawayo, though owned by the Rhodesia Railways, is operated by the S.A.R., using R.R. locomotives and S.A.R. coaches. It was here that the disastrous Plumtree collision took place, on April 4 of last year, when the Rhodesia Express collided head-on with a mixed train. To anyone knowing the vast stretch of open semi-desert through which the line runs, such a collision would seem out of the question, but by an unfortunate chance the trains met on a curve lying in deep cutting, the only place of its kind on the whole section.

From Bulawayo the Rhodesia Railways Northern Express gives a weekly connection to Sakania, which lies in the extreme south-eastern corner of the Belgian Congo. Two hundred and eighty miles from Bulawayo the train crosses the deep gorge of the Zambesi, and affords a fine view of the Victoria Falls. No amount of description can do justice to "The Smoke that Thunders," and to appreciate fully the magnificent spectacle a stay of two or three days is essential. From Sakania to Bukama the Chemin

*2-8-2 locomotive at Dodoma, Tanganyika Railways*

de fer du Bas Congo au Katanga runs a connecting train service, passing through Elisabethville, the commercial centre and capital of Katanga province, while from Tenke a line runs to Dilolo, connecting with the Benguela Railway and giving access to the Atlantic coast at Lobito.

At Bukama we have the first break in the railway chain. From here to Kabalo the winding Lualaba River is navigable by small steamers, which, together with the next rail section to Albertville, are operated by the Chemin de fer des Grands Lacs. On the latter portion the through connection is only a fortnightly one, and this is actually



*"Equator" sign of Equator station
K.U.R.*



*Road-motor service lorry and trailer at Masindi Town, Kenya &
Uganda Railways*



Passenger bus, Masindi Port—Butiaba



*Left : Road-motor service lorry and trailer in the Budongo Forest, between Masindi Town and Butiaba, K.U.R.
Right : Stern-wheeler "Rejaf" and barges at El Dueim, White Nile*

CAPE TO CAIRO OVERLAND

the frequency of the service for the complete journey. From Albertville to Kigoma entails the crossing of the deep and often stormy waters of Lake Tanganyika, and some idea of the size of these African lakes may be gathered from the fact that the diagonal crossing, though of 130 miles, is only about a sixth of the total length of the lake.

From Kigoma the Central Line of the Tanganyika Railways runs almost due east to Tabora, from where the Mwanza line branches off to the north, through a thickly populated district, to Mwanza on the southern shore of Lake Victoria. From Tabora the Central Line continues to the Indian Ocean at Dar-es-Salaam, providing the transport "backbone" of Tanganyika, and the outlet for the numerous products of the territory, including cotton, sisal, coffee, and gold. Most of the African railway administrations stick to black for engine livery, but the Tanganyika Railways use a pleasant red-brown, which shows up well as the locomotives are kept in a commendable state of cleanliness. The gauge here is one metre, the same as that of the Kenya & Uganda Railways, though further north the 3-ft. 6-in. gauge re-appears on the Sudan Railways.

Lake Victoria is the second largest inland sheet of water in the world. It has an area of over 26,000 square miles, is about 3,700 ft. above sea level, and, in contrast to the long and narrow Lake Tanganyika, is almost square in shape. A long arm, the Kavirondo Gulf, reaches out to the north-east, with Kisumu, the original terminus of the Kenya & Uganda Railways, at its head.

Kisumu is the chief port for the Lake Victoria steamers, and as the service runs completely round the lake, we have the choice of two routes, by the eastern or western shores, to Port Bell, which is the port for Kampala. Of these the western is the shorter, though the eastern is perhaps the more interesting, giving many glimpses of native towns and villages, all set in pleasant green country which slopes gently down to the lakeside. It is difficult to realise that the comfortable lake steamers, the largest of which are of 1,200 tons displacement, have been transported, piece by piece, for 587 miles by rail from Mombasa, and assembled on the lakeside at Kisumu.

Kampala, the commercial capital of Uganda, is the present terminus of the K.U.R.; a magnificent new station is at present in course of construction, the railway working in conjunction with the local town-planning committee, whose aim it is to see that Kampala grows in an orderly and worthy manner. During the cotton season the line to Nairobi and the coast is taxed to capacity, the fine system of roads in Uganda making it easy for the crop to be brought to the railway for shipment; but at other times the arrival of the mail train from Nairobi provides almost the only excitement for the traveller interested in railway matters. Altogether the K.U.R. provide quite a number of links in the chain of trans-African transport, starting with the Lake Victoria section. Their next is by rail from Port Bell, through Kampala, to Namasagali, which is the head of the first navigable reach of the River Nile. From here along the Victoria Nile, and following its course through the papyrus-fringed intricacies of Lake Kioga, a second steamer journey brings us to Masindi Port. Here the river turns sharply north-east, making a long and unnavigable detour before reaching Lake Albert, and at Masindi Port the first road-motor link starts. This connects Masindi Port, through Masindi Town to Butiaba, on the eastern shore of Lake Albert.

The road carries heavy traffic, including a good deal of equipment for the mines in the north-eastern Congo, and it is fortunate that the local laterite gravel makes an excellent, hard, all-weather surface. The road is also of interest as providing a good example of railway thought

applied to road construction, having long, easy grades and curves, skirting hills and avoiding any suggestion of "up and over." Earthworks are frequent, and the vegetation is cleared well back from the inside of curves, to give good visibility.

The Victoria Nile flows into Lake Albert practically side by side with the outgoing Albert Nile, and this fact confused many early seekers for the source of the great river. At present Lake Albert has the latest, though not the largest, vessel in the K.U.R. Marine service. This is the *Robert Coryndon*, of 860 tons displacement, which maintains the service between Butiaba and the mouth of the Albert Nile. She looks much more like a miniature liner than the usual lake steamer and is an extremely comfortable vessel, but draws too much water to continue up the river to Nimule, and a change has to be made into one of the older stern-wheelers for this. Nimule, the northern outpost of the K.U.R., is an extraordinarily primitive place for the interchange point of two important Government transport services. It consists merely of a road, sweeping round a long bend and coming to an abrupt stop at the river bank, which has been reinforced with a few poles and sleepers. An open-ended wood and corrugated iron shed straddling the road (large enough to shelter a single lorry) and an ordinary station-type name board bearing the legend "Nimule," complete the scene. True, there are a couple of houses and some native huts about half a mile up the road, but roadway, shed, and board are the only things to mark the spot where the road-motor service of the Sudan Railways picks up the traveller for the north.

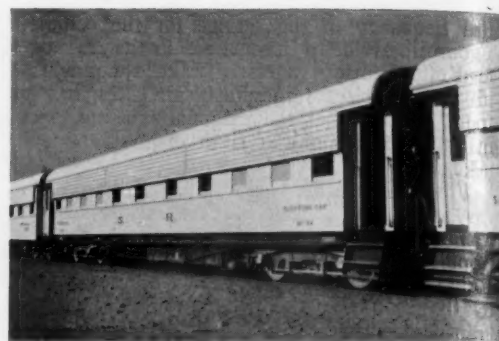
The road service runs, for passengers, only "by request," connecting at Juba with the steamer service on the White Nile. Just north of Nimule the Nile flows through a narrow valley, the only break in the tumbled ranges of hills which lie all round, and the character of the country led to the Arabs calling the river *Bahr-el-Jebel* or "River of the Hills." The road from Nimule to Juba is 120 miles long, and runs along the higher ridges roughly parallel with the river. It is well graded and has a good surface, with the maintenance camps, so familiar on Central African roads, at regular intervals. The railway tradition appears again here, in the form of neat name-boards at every camp. At present this section carries little but Sudan Railways' traffic, but with the recent opening of the new road between Atiak and Nimule, giving direct road communication from Juba, through Gulu and Masindi Town to all parts of Uganda, it is expected that traffic will increase considerably.

Juba is the southernmost town of importance in the Sudan, being the capital of the Equatoria province, and from here to Khartoum is the longest unbroken section of the journey, taking eight days for the downstream passage and twelve up, against the current, though the overall time can be shortened by two days by connecting at Kosti with the Khartoum—Ed Obeid train.

At Juba we have descended from the mountains, lakes, and forests of Equatorial Africa, and to the north stretches the greatest single obstacle to north-south communication in Africa—the Sudd. This is a huge area of thousands of square miles of papyrus and grass swamp, through which, about 30 years ago, the original river channel was traced and re-cut after long neglect while the Sudan was in the hands of the Mahdi and the Khalifa. The White Nile steamers, *Rejaf* and *Omdurman*, are shallow-draught stern-wheelers of quite recent build, propelled by slow-speed two-cylinder compound engines which must delight the eye of engineers of the older school. But here the steamer is not the whole story, being merely part of a floating village consisting of from four to six barges lashed alongside and in front. First class passengers



Khartoum-Wadi Halfa sleeping-car express at El Damer



Latest type of sleeping car, Sudan Railways

travel on the steamer, "special second" class on a barge alongside, and the second, third, and fourth classes (Arabs and natives) on the others, the lower decks of which accommodate luggage, the native passengers' household goods, pets, other animals and merchandise of all descriptions. At night this ensemble presents an extraordinary spectacle, looking like the superstructure of some great sinking liner, in which, though all the hull has sunk beneath the surface, the electric lights still function. The tortuous channel through the Sudd is a severe test of the helmsman's skill, and in fact many of the sharper bends are negotiated by a process of "cannoning" off the banks.

Thirty miles from Khartoum is the Jebel Aulia dam, the most recently completed addition to the huge series of works which help to control and harness the Nile waters. Khartoum itself, situated at the junction of the Blue and White Niles, is a large town, the capital of the Sudan, and famous for the historic events which took place during the loss and re-conquest of that territory. From here the main line of the Sudan Railways runs through Berber to Abu Hamed; thence across the desert in an almost straight line to Wadi Halfa. This section was laid at great speed and in face of tremendous difficulties, as a military railway during the campaign of 1896-98, and proved invaluable to Kitchener's forces. (A vivid account of the making of "the desert railway," as it was called, will be found in "The River War," by Winston Churchill.) The main-line trains of the Sudan Railways run under trying conditions of dust and heat, but are extremely comfortable, and, among other details, have special glass in the carriage windows which cuts out the intense glare yet leaves the natural colouring of desert.

From Wadi Halfa the last steamer link runs to Shellal, opposite the famous Temple of Philae and just south of the Assuan dam. As the level of the water behind the dam varies by as much as 60 ft. during a year, a long sloping siding has been laid on the original river bank, with a small floating station. As the water advances, the station is moved up the line, and as it recedes, is moved down again, the track being dug out of the accumulated mud at the same time. From Shellal to Cairo the Egyptian State Railways provide the fastest, though by no means the cleanest, trains of the entire journey, and this, also, is the only standard gauge portion of the route. Pullman and sleeping cars of the International Sleeping Car Company are run on the principal trains, though their cream exteriors and louvred window shades give them an unusual appearance compared with those on European lines.

Such is the Cape to Cairo Railway as it is today; whether it will ever be completed is extremely doubtful, though it is not quite static as yet. Surveys have been made for lines north-eastwards from Uganda, and also north-westwards into the Belgian Congo. Both routes would aim at circumventing the tremendous barrier of the Sudd, and the western would eventually link up with a southward extension, also surveyed, from El Obeid, the present terminus of the Sudan Railways.

But today it is possible for the traveller to take a ticket to Cairo in Cape Town, or *vice versa*, though perhaps "ticket" is hardly the word for the bulky collection of pasteboard, paper slips, and books of coupons which will entitle him to travel for almost 7,000 miles across this most fascinating continent, and sample its amazing contrasts of scenery, climate, and ways of living.

New G.W.R. Design of Cab for Lorries

A cab of unorthodox design, which will enable drivers of road motor lorries to obtain an unrestricted view when reversing and yet keep both feet on the controls and hands on the steering wheel, has just been built by the Great Western Railway at its Swindon works. The cab has a somewhat one-sided appearance as it extends to the full width of the vehicle on the right-hand side, whereas, in the orthodox designs, the body often protrudes by as much as a foot beyond the cab on both sides, blocking the view to the rear and necessitating the driver leaning out—often through an open door—with consequent part loss of control. The new cab overcomes these difficulties as the car can be driven from the extreme right-hand side of the vehicle, which has sliding doors instead of those which open out against traffic. It is claimed that this new design is a contribution towards safety on the roads as it places lorry drivers in the same position as those of private cars, a fact that is appreciated by representatives of the motor-

ing industry who have been given the opportunity of inspecting one of the five vehicles fitted with the new cab. A further 15 cabs are now under construction at Swindon.

DUNLOP RUBBER COMPANY IN 1938.—In the course of his address to the fortieth annual general meeting of the Dunlop Rubber Co. Ltd., on April 4, Sir George Beharrell, the Chairman, said that the aggregate total profits of the whole Dunlop group of companies in 1938 was £2,375,000, which was £129,000 less than the corresponding total in 1937. The total for 1937 of £2,504,000 was the highest for any of the past six years. The net profit of the Dunlop Rubber Co. Ltd. for 1938 was £1,501,000, and a dividend of 8 per cent. with a bonus of 1 per cent. was recommended. Sir George Beharrell mentioned that the sales of rubber wings for motor vehicles which were a comparatively recent development, continued to increase, and there was every indication that their success in the passenger bus field would be repeated in the goods vehicle market. The wing was flexible, weatherproof, and economical.

AUTOMATIC LOCOMOTIVE WATER SCOOP CONTROL

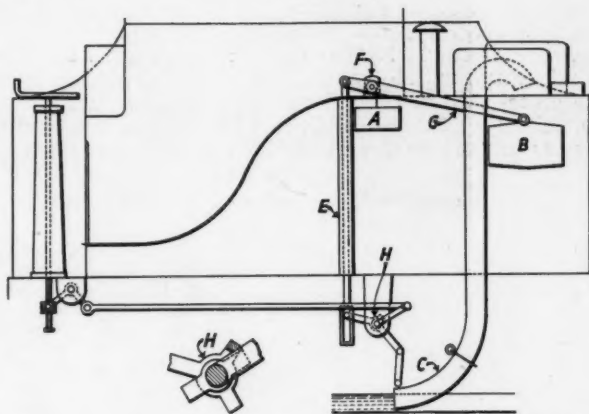
A device for reducing water wastage over track troughs by ensuring that the scoop is raised when the tender tank is full

AS is well known considerable wastage of water often occurs when locomotive tenders or tanks are being replenished from track troughs, especially when travelling at speed. This wasted water, some of which is sprayed over the track and train, with attendant discomfort to passengers who may be close to open windows or ventilators, or damage to freight, represents a considerable loss in money to the companies each year, since the water has all to be pumped by the railways, or bought, and then often chemically treated. Much thought has been given to this problem by the mechanical departments, and one outcome was the anti-splash plate introduced by the L.M.S.R. and now used also by the L.N.E.R. and G.W.R. This, when lowered in front of the scoop, trims or piles the water toward the scoop mouth, thus reducing the volume thrown aside.

Having reduced the quantity of water wasted at the pick-up point the problem remained of how always to prevent taking up more than the tank would hold, since the excess intake, often totally unavoidable because, against the weight of the inrushing water, the fireman was unable to operate the normal handwheel scoop control in time to prevent it, rushed from the overflow above the tank, wetting the coals, causing in turn furred-up tubes, and swamping the foot-plate with attendant discomfort to the enginemmen, particularly in cold weather.

Obviously, here the problem was to find an easy means of raising the scoop at the appropriate time. Power methods have been used, but the accompanying half-tone illustration and drawing show a simple mechanical arrangement which has just been worked out and which is claimed to overcome fully the difficulty of getting the scoop up when required and is further adaptable to entirely automatic operation by trips so that, in its advanced form, the engine crew need hardly know that water is being taken on at all.

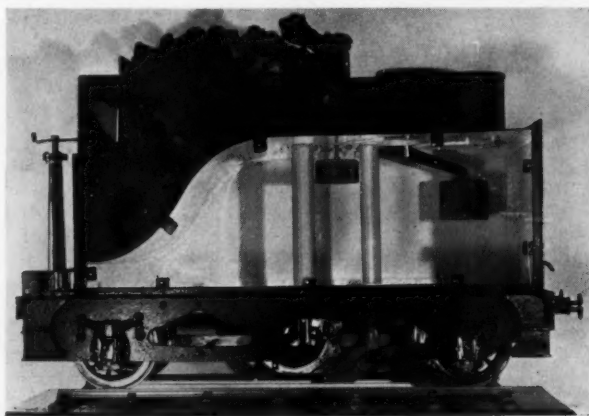
Briefly, the apparatus is an addition to the present hand-operated water-scoop gear in the form of a pilot float *A*, which lifts when (the scoop having been lowered by the hand-gear) the water reaches a predetermined level in the



Layout of automatic scoop control gear with detail of three-way loose link

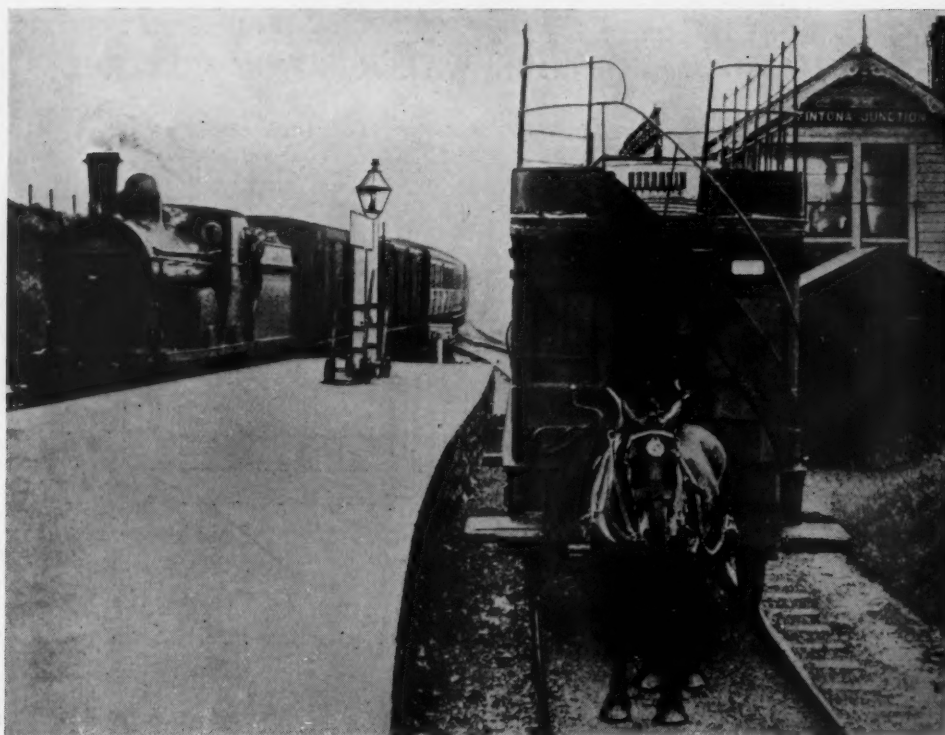
tank, and a main float *B*, which will raise the connected scoop *C* through a tube-encased rod *E* and links. When the pilot float, set near the top of the tank, rises because the tank is full, its lever releases a locking device or spring catch at *F*, which allows, through its arm *G*, the main float *B* to rise and lift the water scoop with it. The hand-gear, now free of any weight, is then worked back by the fireman to the scoop-raised position and locks the scoop through the intermediate three-way loose link *H*, the purpose of which link is to enable the large float to lift the scoop as required, and at the same time to enable the handwheel to follow it up and lock it when the fireman is ready to do so. Its use does not preclude hand operation of the scoop whenever desired, as, for example, when the tender has not filled due to shortage of water in the trough.

The pilot float *A* is steadied by a gland, and the accompanying illustration shows the general layout and proportions of the gear, the construction of which is claimed to be both simple and robust, and requiring practically no maintenance, making it readily adaptable to present-day conditions of locomotive service. With slight modification of the existing layout the pilot float could be connected to a power arrangement using, say, compressed air or vacuum or steam, and dispensing with the large main float to lift the scoop. The originator of the apparatus, which is covered by patent, is an L.M.S.R. fireman, Mr. J. A. Carter.



Sectional model of automatic tender water control gear showing pilot and main floats and connections to scoop and handwheel

LONDON STREET WORKS PROGRAMME.—The total area of the principal roadways to be resurfaced in the London Traffic Area during the next six months is 1,730,000 sq. yds., which compared with the corresponding period of last year shows a decrease of about 18 per cent. In order to minimise inconvenience to traffic, the Minister of Transport has made an order fixing the dates on which the works shall be begun. Alternative routes will be available when a street is entirely closed and roads affected by public events such as race meetings, football matches, and exhibitions will not be closed during such events



"Train" consisting of a tramcar-type vehicle on the horse-operated G.N.R. (I) branch line from Fintona Junction to Fintona in County Tyrone



A striking photograph of the south entrance to Blackheath tunnel, Southern Railway

RAILWAY NEWS SECTION

PERSONAL

L.M.S.R. EXECUTIVE COMMITTEE

The directors of the L.M.S.R. announce that they have appointed Mr. G. L. Darbyshire, O.B.E., Chief Officer for Labour and Establishment, to be a member of the L.M.S.R. Executive Committee.

Mr. G. L. Darbyshire, O.B.E., Chief Officer for Labour and Establishment, London Midland & Scottish Railway,

individuals but also includes all office arrangements, the police, medical, educational, and welfare services, and the superannuation funds. Mr. Darbyshire is prominently associated with the labour negotiations affecting the main-line railway companies and recently represented them in the proceedings before the Railway Staff National Tribunal arising out of claims by the railway trade unions for improvements in existing rates of pay and conditions of service. He is a member of the Govern-

Mr. K. W. C. Grand, who, as recorded on page 749, has been appointed Principal Assistant to the General Manager, Great Western Railway, was educated at Rugby, and joined the service of the G.W.R. in 1919 at Park Royal goods station. After gaining experience there, at Ealing Broadway, and in the Divisional Superintendent's Office at Paddington, he was transferred in 1922 to the General Manager's Office. In March, 1926, he was appointed



Mr. G. L. Darbyshire, O.B.E.

Chief Officer for Labour and Establishment, L.M.S.R., appointed a member of the L.M.S.R. Executive Committee



Mr. K. W. C. Grand

[Vandyk]

Appointed Principal Assistant to General Manager, Great Western Railway

whose appointment as a member of the company's Executive Committee is recorded above, entered the service of the former London & North Western Railway in the Traffic Department at Crewe in March, 1898. After a wide experience in various positions in the Passenger and Goods Departments he was appointed Chief Staff Clerk to the District Superintendent at Liverpool in June, 1910. He occupied this position for nine years and was then promoted to the staff of the General Manager, to deal with staff and labour questions. After the formation of the L.M.S.R. Mr. Darbyshire became Assistant to the Chief Officer for Labour and Establishment, and succeeded to the position of Chief Officer for Labour and Establishment in January, 1930. This office has functions which closely resemble those of the establishment office of a Government department, and it covers not only the staff questions affecting a payroll of upwards of a quarter of a million

ment Committee on Rehabilitation of Persons Injured in Accidents; and is a former Member of Council of the Institute of Transport. He was awarded the O.B.E. in connection with the centenary of the London & Birmingham Railway last year.

Mr. G. H. Loftus Allen, Advertising and Publicity Officer, London Midland & Scottish Railway, sailed on the *Queen Mary* on Wednesday to attend the formal opening of the British pavilion at the World's Fair, New York, as a representative of the British railways.

MINISTRY OF TRANSPORT SECRETARIES

Captain the Rt. Hon. Euan Wallace, M.C., M.P., Minister of Transport, has appointed Mr. Denis O'Neill as his Private Secretary, Mr. G. A. W. Smith as his Assistant Private Secretary, and Mr. Bartle Bull as his Parliamentary Private Secretary.

General Agent for the U.S.A. and Canada with office in New York, and on his return to England became, in May, 1929, Assistant Publicity Agent. On the expiration of the company's trade advertising agreement with its contractors, Mr. Grand was appointed Commercial Advertising Agent, in 1930, to organise the control of the department newly created to deal with this branch of advertising. In January, 1932, he took over also the charge of the Publicity Department with the title of Commercial Advertising and Publicity Agent. In 1933 he was associated with the late Squadron Leader S. B. Collett (Assistant Secretary, G.W.R.) in the organisation of the first railway air service, inaugurated by the G.W.R. between Plymouth and Cardiff, and subsequently extended to Birmingham. Mr. Grand became Commercial Assistant to the Superintendent of the Line in July, 1933, and just over a

year later was appointed General Assistant to the Superintendent of the Line. In May, 1936, he became Divisional Superintendent at Swansea, and in October, 1937, was appointed an Assistant to the General Manager at Paddington.

Mr. T. S. Nicol has been appointed Secretary of the North East Coast Institution of Engineers & Shipbuilders.

Mr. F. Everitt, who, as recorded in our issue of April 14, has been appointed District Engineer, Crewe, L.M.S.R., began his career in 1902, entering the District Engineer's Office, Stratford, Great Eastern Railway. He

the C.N.R. prior to his present appointment.

M. Berthelot, Chief Secretary of M. Anatole de Monzie, Minister of Public Works, has been appointed Assistant General Manager of the National Railways Company in succession to M. Surleau, who has now taken up his new duties as Administrator of the City of Marseilles.

Mr. W. Philip, Divisional Accountant, Scottish Area, L.N.E.R., retired from the service on March 29, after completing 50½ years' service. Mr. Philip entered the former North British Railway Company in 1888 as a clerk at

of liability to recall, ceases to belong to the Reserve of Officers (April 23).

We regret to record the death on April 10 in Buenos Aires at the age of 62 of Mr. Ralph Kirby, M.Inst.C.E., late Chief Engineer, Central Argentine Railway. Mr. Kirby began his career in 1892 as an articled pupil to the District Engineer of the Great Northern Railway at Boston. In 1899 he was transferred to the Chief Constructing Engineer's staff at King's Cross and for two years he was engaged on widening and on survey and parliamentary work. In 1901 Mr. Kirby went to South America to take up an appointment with the Buenos Ayres & Pacific Rail-



Mr. F. Everitt

Appointed District Engineer, Crewe,
L.M.S.R.



Mr. W. Philip

Divisional Accountant, Scottish Area, L.N.E.R.,
1929-39



The late Mr. Ralph Kirby

Chief Engineer, Central Argentine Railway,
1917-31

remained in this office until 1912, when he went to the Divisional Engineer's Office, Crewe, L.N.W.R. From 1915 to 1919 Mr. Everitt saw war service at Salonica and in France; he gained a Commission in the Royal Engineers. After the war Mr. Everitt returned to his position at Crewe, where he remained until 1931. In the meantime, consequent on the grouping, the office had become that of the Divisional Engineer, L.M.S.R. In 1931 he became Assistant to the District Engineer, Crewe, from which position he is now promoted. Mr. Everitt is an Assoc. M.Inst.C.E.

Mr. R. J. Foreman has been appointed General Freight Traffic Manager of the Canadian National Railways. He entered the service of the Grand Trunk Railway as a clerk and stenographer at Toronto in 1892, subsequently serving in clerical posts with other systems until his appointment as Assistant General Freight Agent of the Grand Trunk Pacific Railway in 1911. Mr. Foreman has held a number of important positions in the Foreign Freight Department of

Dunfermline, and was transferred to the General Accountant's Office, Edinburgh, in 1890, becoming Chief Clerk and Bookkeeper in that office in 1913. On the amalgamation of the railways in 1923, he was appointed Chief Bookkeeper in the Chief Accountant's Office of the L.N.E.R. at London, returning in 1929 to Edinburgh as Divisional Accountant of the Scottish Area.

The late Mr. W. B. Carson, Chairman of the Great Northern Railway Company (Ireland), and a Director of the Royal Bank of Ireland, whose death was recorded in our issue of January 13, left personal estate in England and Eire valued at £4,348.

From *The London Gazette* of April 21: Regular Army Supplementary Reserve of Officers, Royal Engineers, Transportation: Captain R. M. Jones, B.A., R.E., to be Adjutant (March 16).

From *The London Gazette* of April 28: Regular Army Reserve of Officers, Movement Control Staff (Railways & I.W.T.): Lt.-Colonel A. H. C. Trench, C.I.E., having attained the age limit

way; until 1907 he was engaged in the construction of that company's independent line into Buenos Aires, after which he was appointed Sectional Engineer at Junin. Mr. Kirby went to the Central Argentine Railway in 1909 as Engineer-in-Charge of the Drawing Office, a position he relinquished two years later to become Chief Construction Assistant to the Chief Engineer. In 1916 Mr. Kirby was named Acting Chief Engineer; in 1917 he was confirmed in the position of Chief Engineer, from which he retired in 1931.

Mr. D. M. Robbertze, Manager of the South African Railways & Harbours Publicity and Travel Department, has been appointed Chairman of the South African Tourist Development Corporation. Other members are: Commander C. P. Newton, Manager of the Cape Peninsula Tourist Bureau; Professor A. J. Norval, a member of the Board of Trade and Industries; Mr. H. J. Crocker, Director of Publicity in Johannesburg; Mr. H. O. B. Grant, representing the Knysna district, and Mr. A. M. Campbell, representing the Union Castle Mail Steamship Company. Reference

to the corporation is made in our Overseas columns this week.

G.W.R. APPOINTMENTS

The following appointments are announced by the Great Western Railway:—

Mr. K. W. C. Grand, Assistant to the General Manager, Paddington, to be Principal Assistant to the General Manager, Paddington (from May 1).

Mr. S. B. Taylor, Chief Clerk, Secretary's Office, Paddington, to be Assistant to Secretary, Paddington (from May 1).

Mr. A. C. Barnes, Registration Office, Paddington, to be Registrar of Stocks (from July 6).

Mr. V. J. H. Webb, Assistant to Divisional Locomotive Superintendent, Wolverhampton, to be Works Manager, Stafford Road Works, Wolverhampton (from May 3).

Mr. A. G. Snell, Assistant to Divisional Locomotive Superintendent, Worcester, to be Assistant Divisional Locomotive Superintendent, Wolverhampton (from May 3).

Mr. J. Colclough, draughtsman, Drawing Office, Swindon, to be Assistant to Divisional Locomotive Superintendent, Worcester (from May 3).

Mr. S. Sweeney, Hotels Department, Paddington, to be Outdoor Assistant, Hotel and Catering Department, London Division (from April 24).

Mr. Stuart Clark, whose appointment as Indoor Superintendent (Central Buses), London Transport, was recorded on April 7, was born in 1895 and educated at Dulwich College and London University. He gained engineering experience in the workshops of the Daimler Co. Ltd. until 1915, when, in June of that year, he was granted a Commission in the Mechanical Transport. He served in France until March, 1919, when he was invalided home. After service with the Daimler Hire Limited, he joined the London General Omnibus Co. Ltd. in 1920. He became an Officer in 1933 and was appointed Divisional Superintendent (Central Buses), London Passenger Transport Board in 1934.

Mr. G. P. Barnett, whose appointment as Staff Superintendent, Central Buses, Trams and Trolleybuses, Country Buses, and Coaches, London Transport, was announced in our issue of April 7, was born in 1884. He joined the Secretary's office of the London Road Car Co. Ltd. in May, 1900, and in 1912 was appointed one of the three chief divisional inspectors in the London General Omnibus Co. Ltd. Later that year he was appointed Traffic Auditor, and became Assistant to the Operating Manager in 1914. In 1919 Mr. Barnett became Road Superintendent, and in 1925 was appointed Assistant Traffic Superintendent, a position he held until he became Staff Superintendent of the London General Omnibus Company in 1931. On the formation of the London Passenger Transport Board in 1933 he was made Staff Superintendent (Central

Buses), the position from which he has lately been promoted.

Mr. S. Charlton, of the Office of the Superintendent of Operation, Southern Railway, who for some time has been a Councillor and Alderman of the Borough of Reigate, has now been appointed by the Lord Chancellor as a Justice of the Peace for that borough.

INDIAN RAILWAY STAFF CHANGES

Mr. J. C. Gibson has been confirmed as a Divisional Superintendent, E.I.R.

Mr. J. R. Harrison, Chief Mining Engineer, Railway Board has been granted nine months' leave as from January 31.

Mr. H. N. Parker has been appointed to officiate as Deputy Traffic Manager, E.B.R., as from February 28.

Mr. F. G. S. Martin, Controller of Stores, E.I.R., has been granted 6½ months' leave as from April 7.

Mr. H. J. Darling, Chief Electrical Engineer, E.I.R., has been granted 9½ months' leave preparatory to retirement, as from April 12.

Mr. P. N. H. Baker has been appointed to officiate as Deputy Chief Mechanical Engineer (Running Locomotive), E.I.R., as from February 9.

Mr. H. M. Kitchen has been appointed to officiate as Deputy General Manager, Personnel, E.I.R., as from February 15.

Mr. C. A. K. Bradley, Deputy Chief Mechanical Engineer, E.B.R., has been granted leave for 6½ months as from March 24.

PRESENTATION TO MR. J. B. STEPHENS

At the quarterly meeting of Irish general managers held at the Irish Railway Clearing House on April 17, Mr. J. B. Stephens was presented with a pair of binoculars in case, on behalf of the members of the conference. Major Malcolm Speir, M.C., in making the presentation, referred to the successful railway career of Mr. Stephens, who, on retiring from the general management of the G.N.R. had been appointed Deputy Chairman of that company. He expressed appreciation of the great assistance Mr. Stephens had rendered to the conference and the railway com-

panies in general, especially during the difficult times they had experienced in recent years. Messrs. Morton, Minnis, Irwin, Veltom, and Little also paid tribute to the high qualities possessed by Mr. Stephens. Mr. Stephens, in replying, thanked his colleagues for the many tributes which had been paid to him, and expressed his pleasure at being still in a position to continue his work in the interests of the railway service.

We regret to record the death on April 29 at the age of 52 of Mr. George W. Robinson, General Manager of the Yorkshire Traction Co. Ltd. Mr. Robinson, who was a native of the Dewsbury district, went to Barnsley as chief clerk of the old Barnsley & District Electric Traction Co. Ltd. Subsequently he became Assistant Manager, and in 1928 was appointed General Manager. In November of that year the title was changed to the Yorkshire Traction Co. Ltd., and in December, 1929, the L.M.S.R. and L.N.E.R. acquired large financial interests. Mr. Robinson was also a Director of County Motors (Lepton) Limited, the Fawdon Bus Co. Ltd., and Sheffield United Tours Limited, all railway-associated road transport undertakings in Yorkshire.

Forthcoming Events

May 5 (Fri.).—Institution of Railway Signal Engineers. Visit to The Ediswan Co., Ponders End.

L.M.S.R., at Wharnclyffe Rooms, Hotel Great Central, Marylebone Road, London, N.W.1, Final Ambulance Competition.

May 6 (Sat.).—Permanent Way Institution (Manchester-Liverpool), at Holy Trinity Hall, Beckwith Street, Birkenhead, 3 p.m. "Flat Bottom Track," by Mr. N. Swinerton.

May 8 (Mon.).—Permanent Way Institution (London), at Underground Railways' Dining Club, Pelham Street, S.W.7, 7 p.m. "The Use of Steel Sleepers," by Messrs. A. Carn, A. Easty, and T. Thomas, Lanter Lecture; "Steel Sleepers—The Corrosion Aspect," by Dr. J. Hudson.

May 9 (Tues.).—Institution of Civil Engineers, Great George Street, London, S.W.1, 6 p.m. Annual General Meeting.

May 11 (Thurs.).—Institution of Electrical Engineers, Savoy Place, London, W.C.2, 6 p.m. Annual General Meeting. Corporate Members and Associates only.

Chief Mechanical Engineer's Department, L.M.S.R.

Transfer of staff to Derby

It is officially announced that the Headquarters Organisation of the Chief Mechanical Engineer and Electrical Engineer's Department, London Midland & Scottish Railway, is shortly to be transferred from Euston to Derby. This transfer is being made in the ordinary course of development of the company's organisation. The department at present occupies offices at Drummond Street, Euston, which it is expected would be required to be vacated should the proposed reconstruction of Euston station be carried out.

The staff to be transferred numbers between 200 and 300, comprising (in addition to the Chief Mechanical Engineer and Deputy Chief Mechanical and Electrical Engineer and assistants), technical staff, headquarters draughtsmen, and clerical staff, and also certain of the Chief Accountant's staff engaged on work connected with the locomotive and electrical accounts. The transfer of staff and office records will begin within the next few weeks and arrangements have been made for the move to be completed with practically no disturbance to work.

Salesmanship and the Railway

Abstract of presidential address by Mr. Ashton Davies, C.V.O., O.B.E., Acting Vice-President, L.M.S.R., delivered to the Railway Students' Association, at the London School of Economics, on April 27

In considering what I should say to you on my subject of "Salesmanship and the Railway" this evening, I have had prominently in mind that the majority of you, if questioned on the subject of salesmanship, would I fancy reply somewhat vaguely that salesmanship was a form of "ballyhoo" emanating from America, where it is certainly practised in a manner which does not apply or appeal to us in this country. First of all, then, I want to disabuse your minds of the idea that real salesmanship was invented in America and that it is a medium for inducing people to buy something which they do not require. Salesmanship has a long and honourable history.

Birth of Salesmanship

By the early years of this century, Britain had become the workshop of the world, and the goods which were produced were in such demand that the buyers very largely came to the sellers, and even where a commercial traveller was employed he had only to go round and display his samples. The principles and practice of salesmanship were thus to a great extent lost sight of, and it was only after the war, when economic nationalism became an overshadowing force, and trade depression added its quota to commercial difficulties, that the study and application of modern sales technique came to the fore. It took the heads of industry, who as a whole are a very conservative body, a long time to realise the position; today, the position is much improved, but there are still many who do not realise the importance of the subject. I am glad to say, however, that the railways are not numbered among these diehards.

Up to the time of the war the railways provided practically the whole of inland transport, and while there was competition between them as to the actual conveyance of traffic, rates and conditions were agreed and standardised, and influencing senders or travellers to a particular route was therefore a matter of other considerations, very largely personal or social, into which the question of salesmanship did not enter. In fact the writer of an article in *The Railway Magazine* summed the matter up very neatly in the expression "In England the canvasser goes round *begging* for traffic." With the development of the internal combustion engine and roads, the railways found themselves up against an increasingly difficult proposition, and like all trading and commercial concerns in a similar plight, they turned to, and found a partial remedy in salesmanship. As you will naturally expect, my remarks as to what has

been done will have particular reference to the L.M.S.R., but very similar steps have been taken by the other companies.

All sorts of things can be sold, apart from tangible goods. In the case of railways what we have to sell is a service. Now, the application of salesmanship is not just a matter of appointing salesmen—it is a much more radical business involving a new conception and a changed outlook in respect of the marketing or sale of the railway companies' services and facilities. This has been in evidence on the L.M.S.R., and much has been done by the management to facilitate and encourage this change. The amalgamations of 1923 largely reduced inter-railway competition, and the pooling arrangements which have since been made virtually abolished the remainder. A weakness from which railways suffered in the past was to concentrate rather too exclusively on production—i.e., operating and technical matters—and a tendency to neglect commercial matters arose in consequence. The organisation also was such that commercial activities were divided among several officers, each of whom had many other important responsibilities. Although various steps in the direction of further developing the commercial side of the business of the L.M.S.R. had been taken from time to time, the importance of salesmanship and an appreciation of its possibilities were fully recognised in September, 1932, when an appointment of Chief Commercial Manager was made, who became responsible for selling rail transport and facilities of all kinds, and who in effect became the company's Chief Salesman. The L.M.S.R. Board of Directors specifically ordained that the Chief Commercial Manager should be the representative and advocate of the public in the inner circle of railway administration. He is the arbiter of all that is required in the way of service to the public, and it is the business of the technical and operating sides to co-operate with him in arranging to supply that service.

"Market Research"

During the earlier post-war years it became apparent that the level of certain fares by rail was higher than the purse of John Everyman would permit him to pay. The railway companies were thus face to face with a situation associated with their passenger fares policy which, on the one hand, allowed a serious and persistent erosion of business to arise and persist, and, on the other hand, the prices for certain forms of travel—notably, the excursion class—were such that maximum business was not developed. In the examina-

tion of the position so far as the L.M.S.R. was concerned, it was clear that the full measure of the changes which were occurring, or the effects of any action which might be decided upon, could not be properly visualised with the aid of the data then available. Arrangements were, therefore, made for a completely analysed statement to be compiled of the whole of the L.M.S.R. originating passenger traffic for two months of the year—February, regarded as a normal month, and August with the maximum of holiday travel being selected. A great deal of valuable and interesting information came to light, much of it contrary to the then current opinion. In the summer period of 1933 subjected to analysis, for example, the number of passengers carried (excluding season ticket holders) for distances not exceeding 20 miles represented no less than 73 per cent. of the L.M.S.R. total passenger journeys, providing about one-fifth of our passenger revenue, which for the year 1934 approximated £18,000,000. Another important feature laid bare was the disquieting fact that our long-distance business—though less vulnerable to road competition—was showing a distinct tendency to decline, which could be ascribed as being due to impoverished spending power.

Effect of Excursions

By that time we had developed the policy of granting extraordinarily cheap fares for excursionists, with the result that the passenger journeys originating on the L.M.S.R. in this section of our traffic increased from 41,000,000 in 1923 to 162,000,000 in 1933. However, this naturally produced its reactions upon our traffic at other fares; the ordinary bookings alone declined from 152,000,000 in 1923 to 23,000,000 in 1933.

In our review of the situation in 1932 it had become apparent that all was not yet well with the railway passenger fares policy. Our figures told us, however, that if we were to reduce our ordinary fares from 1½d. to 1d. a mile we must be prepared—deliberately—to "cast bread upon the waters" to the extent of £1,500,000 in the case of the L.M.S.R. alone. It is only necessary for me to remind you of recent history whereby the policy of "a penny a mile" came to be tested first as an experiment and is now the more or less permanent basis of charges for return journeys on the British railways where the period of availability required is more than a day but within one month. The results of this policy, briefly, were, so far as the L.M.S.R. is concerned, that short distance journeys increased 8 per cent. and journeys over 100 miles went up by no less than 34 per cent. in the first year.

From the revenue point of view there was to the four group companies an increase in receipts of £788,000 over the previous year, in

comparison with a decline which had been going on over a period of years at an average rate of nearly £3,000,000, so that the real reflex of the penny-a-mile policy was substantially the difference between the arrested decline and the gain of £788,000.

This is clearly a case where the application of salesmanship has had outstanding results, and as other outcomes of the application of this idea can be instanced agreed charges; streamlined trains; general acceleration—both goods and passenger trains—developments in refrigerated transport; green and blue arrow registration arrangements; new steamers on the Lakes, Clyde, and Irish services; railway air services; throughout road transport; and holiday caravans; which are good samples of what has been done to ensure that the service and the price are right.

So far as getting at the customer in regard to goods facilities is concerned, it is generally possible to do this by personal contact. On the passenger side, however, our customers are the public—numbering over forty million—to whom personal approach is obviously impossible, and the bulk of our advertising is therefore directed to selling transport to them. This advertising falls into two divisions—informative and creative. The informative type, by which I mean those bills and pamphlets announcing that a train or trains will run serving certain places at certain times and fares, represents a very large proportion of our advertising, and is itself to a considerable extent creative. While posters and handbills of this kind are useful and essential, it has been our experience that the press, both national and local, is the most effective medium for making announcements.

What I have termed "creative" advertising is the type which endeavours to arouse in the bosoms of the beholders a desire to leave home and

go somewhere else. In this respect the railways have been in the forefront.

Every Man a Salesman

Having established the necessity for salesmanship on the railway, the question immediately arises "Who are the railway salesmen?" To this question there are two answers. First, in a narrow sense we may say that the 600 canvassers on the L.M.S.R. are the salesmen of the company, and they are in fact full time salesmen, whose only job is selling. The real answer is—any and every member of the staff who in the course of his duties comes in any manner into touch with our customers. This greatly enlarges the scope of our sales force, embracing as it does a tremendous army of all grades and standing, from the Chairman himself down to the youngest vanboy. This is a fact which is only too often not realised, even by the individuals concerned, and it has been my aim during the past six years to promote a better understanding of this fact.

As a further means of causing the staff to realise their individual responsibilities for selling, we introduced the Quota Scheme, the fundamental idea of which is, by setting each station a goal to be reached in terms of receipts, to make the staff think of their activities as resulting in some progress towards that goal. In addition, in order to maintain a regular contact with all concerned, we inaugurated a house magazine known as *Quota News*, which appears monthly, and is distributed to about 70,000 members of the commercial staff each month.

Finally, this is not an academic discussion. Each of us here tonight, as a servant of a railway company, is, or should be, a salesman, whatever the department to which attached. I am a salesman—so are you, and my last word to you is a challenge. What do you really know about your company and its facilities? What sort of an effort do you make to sell your firm

and its products to your friends and neighbours? What sort of a salesman are you?

Mr. Ashton Davies's address had been deferred for five months owing to his illness. The former President, Lord Horne, was to have been in the chair, but was prevented from attending and his place was taken by Mr. L. W. Orchard, Chairman of the committee of the association. A vote of thanks to Mr. Ashton Davies was moved by Mr. C. E. R. Sherrington, Secretary of the Railway Research Service, who emphasised the importance to the railways of salesmanship because in no other industry did the cost of carriage vary so much per unit carried. In addition to members of the association, many guests representing the railways and other interests had assembled to hear Mr. Ashton Davies and to testify by their presence to their gratification at his recovery. Among them were:—

G.W.R.—Major M. J. M. Dewar, Messrs. A. F. Belcher, G. Stephens.

L.M.S.R.—Messrs. T. E. Argile, F. Bound, G. H. Loftus Allen, D. C. McCulloch, Scholes, W. K. Wallace, A. J. Pearson, G. Morton, F. E. Bailey, A. L. Castleman, S. J. Symes.

L.N.E.R.—Messrs. J. E. Sharpe, T. H. Seaton, G. A. Musgrave, A. E. Tattersall, G. Eastop, W. B. Morris, C. Moores.

L.P.T.B.—Major R. Morkill, Messrs. W. P. N. Edwards, W. S. Every, Evan Evans, F. A. Menzler.

Southern Railway.—Messrs. R. M. T. Richards, A. F. Wallis.

Others Present.—Sir Lynden Macassey, Mr. J. C. Patteson (C.P.R.), Prof. A. M. Carr Saunders, Mr. W. T. Stephenson, and Mr. G. Ponsonby (London School of Economics), Messrs. J. A. Kay (Editor, *THE RAILWAY GAZETTE*), D. R. Lamb (Editor, *Modern Transport*), Messrs. A. Winter Gray, F. W. Crews, and C. F. King (Institute of Transport), Mr. C. E. R. Sherrington (Secretary, Railway Research Service).

At the annual general meeting of the association, held after the address, the following elections were made:—

President, Mr. R. Holland-Martin; Hon. Treasurer, Mr. H. Bailey; Joint Hon. Secretaries, Messrs. S. E. Bellamy and C. A. Nisbet.

G.W.R. AMBULANCE PRESENTATION AT WORCESTER.—Mr. J. E. Potter, Divisional Superintendent, presided at the Guildhall, Worcester, on April 19, over the presentation of awards to ambulance workers from various stations in the Worcester Division. Among those supporting the Chairman were the Mayor and Mayoress of Worcester, Dr. and Mrs. W. E. Moore Ede; Mr. R. J. Armstrong, Divisional Locomotive Superintendent; and Mr. J. A. Warren King, District Goods Manager. During the proceedings Lt.-Colonel G. H. Goddard, late R.A.M.C., the examiner of the Worcester class, was presented with a suitcase in recognition of his valued services, and in responding Colonel Goddard said: "Nowhere do I meet with such a high standard of first aid as I do in the Great Western Railway classes." The awards, which were presented by the Mayor, included the Kilbourne Kay shield for advanced workers to the Honeybourne team,

and the Kilbourne Kay Cup for beginners to the Malvern team. Examination awards and a number of the company's gold medals and bars for efficiency were also presented.

HENLEY'S TELEGRAPH WORKS CO. LTD.—At the recent ordinary general meeting of W. T. Henley's Telegraph Works Co. Ltd., Sir Montague Hughman, the Chairman, said that the company had in 1938 almost reached the record figures of 1937 in numbers employed, output, and profits, and had easily beaten the records of its centenary year, 1936. A bonus was being paid to the staff and the hourly paid workers. Trading at the overseas branches had again proved satisfactory, substantial profits being made at each branch. The South African Company had made a fresh record with profits, and business continued good during the present year. Work in India, Australia, and New Zealand had shown considerable expansion.

IMPERIAL AIRWAYS MANAGEMENT.—Replying to a written question in the House of Commons on April 24, Sir Kingsley Wood, Secretary of State for Air, said that he had received from Sir John Reith, Chairman of Imperial Airways Limited, a report of his examination into charges made against the management of the company prior to his appointment. Sir John Reith reported that there was no evidence of victimisation of individual pilots for being members of the newly-formed British Air Line Pilots' Association, and that the repudiation by two prominent gentlemen connected with aviation insurance of aspersions cast upon them had been accepted by that association. With regard to defects of organisation, Sir John Reith reported that some such defects were inevitable in a rapidly-developing organisation, but most of them had since been investigated and the improvement was progressive.

Southern Sunshine

Meteorological Office figures show the favourable sunshine records of resorts served by the Southern Railway

There is a tendency among the public to adopt an attitude of humorous resignation as armour against the supposed uncertainty of our weather. Resignation is a state of mind that must be countered with vigorous measures by those interested in spread-

ing the holiday and travel habit, with the result that the occasional greyness of our skies is really the inspiration behind the volume of original and forceful advertising emphasising how pleasant they are when they are sunny. The Southern Railway has long been



"Sunny South Sam" draws attention to some sunshine records

SUNSHINE RECORDS
(Extracted from Meteorological Office Records)

1935	Hours of sunshine	1936	Hours of sunshine	1937	Hours of sunshine	1938	Hours of sunshine
1. Harwich	1,910	SANDOWN	1,794	VENTNOR	1,742	JERSEY	1,850
2. SANDOWN, I.W. ...	1,893	JERSEY	1,791	SANDOWN	1,724	GUERNSEY	1,845
3. Lowestoft	1,877	VENTNOR	1,755	JERSEY	1,722	MARGATE	1,831
4. HERNE BAY	1,857	LITTLEHAMPTON ...	1,679	GUERNSEY	1,721	VENTNOR	1,821
5. Felixstowe	1,842	WORTHING	1,669	LITTLEHAMPTON ...	1,693	SANDOWN	1,819
6. MARGATE	1,835	Scilly	1,635	EASTBOURNE	1,690	LITTLEHAMPTON ...	1,810
7. Shoeburyness	1,827	ST. LEONARDS	1,632	HASTINGS	1,674	HERNE BAY	1,807
8. SEATON	1,823	SEATON	1,631	RYDE	1,670	WORTHING	1,796
9. ST. LEONARDS	1,806	BOGNOR REGIS	1,630	WORTHING	1,668	RAMSGATE	1,792
10. DOVER	1,804	RYDE	1,629	PORTSMOUTH	1,654	EASTBOURNE	1,788
11. VENTNOR, I.W. ...	1,802	PORTSMOUTH	1,629	Torquay	1,653	HASTINGS	1,783
12. WORTHING	1,802	EASTBOURNE	1,626	Penzance	1,646	Harwich	1,780
13. JERSEY	1,801	Harwich	1,617	TOTLAND BAY	1,642	RYDE	1,768
14. RAMSGATE	1,797	MARGATE	1,616	BOGNOR REGIS	1,640	BEXHILL	1,757
15. Clacton	1,797	SEAFORD	1,616	Scilly	1,638	LYMPNE (HYTHE) ...	1,743
16. FOLKESTONE	1,792	GUERNSEY	1,611	WEYMOUTH	1,628	DOVER	1,732
17. EASTBOURNE	1,789	BEXHILL	1,606	DOVER	1,620	BOGNOR REGIS	1,723
18. Yarmouth	1,780	Penzance	1,604	SEATON	1,617	Torquay	1,722
19. Southend	1,780	DOVER	1,603	BEXHILL	1,607	TOTLAND BAY	1,719
20. LITTLEHAMPTON ...	1,771	HERNE BAY	1,602	BOURNEMOUTH	1,595	WHITSTABLE	1,719
21. TOTLAND BAY, I.W.	1,771	TOTLAND BAY	1,596	Paignton	1,594	BRIGHTON	1,719
22. LYMPNE (HYTHE) ...	1,764	BRIGHTON	1,590	BRIGHTON	1,590	Felixstowe	1,701
23. PORTSMOUTH	1,764	RAMSGATE	1,580	SWANAGE	1,584	Cromer	1,698
24. BEXHILL	1,757	LYMPNE (HYTHE) ...	1,573	POOLE	1,580	SWANAGE	1,685
25. RYDE, I.W.	1,756			Falmouth	1,579	PORTSMOUTH	1,678
26.				FOLKESTONE	1,569	BOURNEMOUTH	1,677
27.				HERNE BAY	1,561	Clacton	1,670
28.				RAMSGATE	1,557	Paignton	1,659
29.				Harwich	1,554	Hunstanton	1,654
30.				MARGATE	1,553	WEYMOUTH	1,646
31.				PLYMOUTH	1,549	POOLE	1,637
32.				ILFRACOMBE	1,548	TUNBRIDGE WELLS ...	1,636

Comparative sunshine figures of British resorts, showing in capitals those served by the Southern Railway

FACTS about SUNSHINE

The sun shines on every coast of Great Britain. But which coast **Always** gets the most?

Holiday resorts served by the Southern

The SOUTHERN Coast Gets the most

METEOROLOGICAL OFFICE RECORDS FOR 1938

1. JERSEY	1,850	10. DOVER	1,804
2. SANDOWN	1,845	11. VENTNOR, I.W.	1,802
3. MARGATE	1,831	12. WORTHING	1,802
4. VENTNOR	1,821	13. JERSEY	1,801
5. SANDOWN	1,819	14. RAMSGATE	1,797
6. LITTLEHAMPTON	1,810	15. Clacton	1,797
7. HERNE BAY	1,807	16. FOLKESTONE	1,792
8. WORTHING	1,796	17. EASTBOURNE	1,789
9. RAMSGATE	1,792	18. Yarmouth	1,780
10. EASTBOURNE	1,788	19. Southend	1,780
11. HASTINGS	1,783	20. LITTLEHAMPTON	1,771
12. Harwich	1,780	21. TOTLAND BAY, I.W.	1,771
13. RYDE	1,768	22. LYMPNE (HYTHE)	1,764
14. BEXHILL	1,757	23. PORTSMOUTH	1,764
15. LYMPNE (HYTHE)	1,743	24. BEXHILL	1,757
16. DOVER	1,732	25. RYDE, I.W.	1,756
17. BOGNOR REGIS	1,723		
18. Torquay	1,722		
19. TOTLAND BAY	1,719		
20. WHITSTABLE	1,719		
21. BRIGHTON	1,719		
22. Felixstowe	1,701		
23. Cromer	1,698		
24. SWANAGE	1,685		
25. PORTSMOUTH	1,678		
26. BOURNEMOUTH	1,677		
27. Clacton	1,670		
28. Paignton	1,659		
29. Hunstanton	1,654		
30. WEYMOUTH	1,646		
31. POOLE	1,637		
32. TUNBRIDGE WELLS	1,636		

New poster issued by the Southern Railway for its intensified sunshine campaign

identified with sunshine, thanks to the territory it serves. An impressive display of meteorological figures makes it idle to dispute its advantages in this respect. Even so, these are days when we have learned the wisdom of being early on the defensive, and an increasing interest in the sun evinced from other quarters has already led to an intensification of Southern Railway sunshine publicity. The official attitude is set forth in a letter we publish on page 722 this week from Mr. C.

Grasemann, the company's Public Relations and Advertising Officer.

We reproduce opposite the first poster in the new campaign, based upon official sunshine figures for Southern Railway resorts extracted from Meteorological Office records. For comparative purposes we also tabulate sunshine-hours per resort (on any railway) for four consecutive years, showing those in the first twenty to thirty places. It will be seen that not only was a



A novel Southern Railway poster presenting the slogan "Set fair on the Southern coast"

Southern resort first in 1936-38 inclusive, but in those three years the first five, ten, and eleven places respectively were gained by places on the Sunshine Line.

Meteorological record posters are no new departure by the Southern Railway, for year by year data of this kind have been persuasively put before the public by the company's well-known poster character "Sunny South Sam." There are indications that this year he will be busier than usual, and at a time when every shred of sunshine has to be treasured as an offset to international gloom it is to be expected that his cheerful countenance will be more welcome than ever.

ALDERSHOT & DISTRICT TRACTION CO. LTD.—The directors of this company propose to capitalise £50,000 of the general reserve, and to distribute a share bonus of 25 per cent., one new £1 share to be allotted for each four held. The company is jointly controlled by Tilling & British Automobile Traction Limited and the Southern Railway.

STAFF AND LABOUR MATTERS

Reduction of Hours in Rail Transport

The report of the Preparatory Technical Tripartite Conference on the reduction of hours in rail transport came before the governing body of the International Labour Office at Geneva on April 20, when the Brazilian, British, and U.S.A. Government representatives expressed their appreciation of the spirit in which the discussions had taken place, although it had proved impossible to proceed further with the proposals for reduction of hours of work. The British workers' representative pointed out that it would be possible to consider the matter further at the October session of the governing body, and the governing body then decided to take no action in the meantime beyond taking a note of the report. The matter will no doubt again come before the governing body in October or some later session.

Common Employment

A bus conductor, Frederick Henry Metcalfe, successfully appealed in the Court of Appeal on April 27 from the judgment of Mr. Justice Macnaghten dismissing his claim for damages against the London Passenger Transport Board, his employer, for injuries in a collision between a tram and his bus. On July 2, 1937, a tramcar belonging to the board and driven by one of its servants, collided with a stationary bus, which also belonged to the board, and of which Mr. Metcalfe was the conductor, with the result that he received serious injuries. The board admitted the negligence of the driver of the tramcar, but set up the defence of common employment. Mr. Justice Macnaghten held that the defence of common employment must prevail and dismissed the action but, in case his decision was thereafter held to be wrong, he assessed the damages at £3,715. The plaintiff appealed.

The Master of the Rolls, in giving judgment, said that the appeal was from the judgment of Mr. Justice Macnaghten, who dismissed the plaintiff's claim on the ground that it was barred by the application of the doctrine of common employment. At the time the judge gave his decision the case of *Radcliffe v. Ribble Motor Services Limited* had been decided by the Court of Appeal, and, having regard to that decision, the learned Judge was compelled to decide the case as he did. But that case subsequently went to the House of Lords (see *THE RAILWAY GAZETTE* of April 14, 1939). In the opinions of Lord Atkin, Lord Macmillan, and Lord Wright, the foundations of the doctrine of common employment were examined afresh in the light of the principal authorities on the subject, and their opinions contained authoritative and exhaustive statements of the law. They held that the doctrine did not apply in that case. He

(the Master of the Rolls) would not find it necessary in the present judgment to add to or embroider the opinions there expressed. To attempt to do so would not only be unnecessary but also highly undesirable. It might be that in some other case the principles would have to be examined in the light of different facts, but fortunately he found himself clearly of opinion that the facts of the present case brought it directly within the principles there laid down.

The facts which immediately leaped to the eye were that at the particular place where the accident occurred the plaintiff was exposed to the general risks of a public thoroughfare and ran the risk of injury from the negligent driving of any driver. He was incurring the general type of risk run by everyone who proceeded along a public thoroughfare. Among the vehicles which he might normally expect to find on that thoroughfare were vehicles belonging to the defendant. The question was whether the Court could find an implied term of the plaintiff's contract of service to the effect that he undertook the risk of suffering through the negligence of drivers employed by the London Passenger Transport Board and put himself in a different position as to negligence of those drivers from his position as to negligence of any other driver. The question whether the doctrine of common employment applied depended on the question whether the appropriate term ought to be implied in the contract of service, and that in turn depended on all the relevant facts of the particular case. It had been argued that a distinction ought to be drawn between such a case and the present where the vehicles were travelling along fixed routes and cases when the juxtaposition of the vehicles was mainly casual. He (the Master of the Rolls) was unable on the facts of the case to draw any such fine distinction. The appeal must be allowed and the damages assessed by Mr. Justice Macnaghten awarded.

Schedule of Reserved Occupations

The Ministry of Labour announced on April 27 that the schedule of reserved occupations (which reserves men in certain occupations for work in industry or in trades in the Forces or civil defence services) has been examined to see how far its application in peace time might be modified to give the maximum of assistance in the recruitment of men for general service in the Territorial Army, the other auxiliary forces, and the civil defence services. As a result it has been decided that men in a large number of occupations hitherto reserved should now be free to volunteer for any service. It is estimated that about 1,500,000 men between 25 and 50 are thus released from restriction upon their recruitment. Of these about 630,000 are men between the ages of

25 and 38, and become eligible for the territorial army field force. Men of 38 and over are eligible for the anti-aircraft and coast defence units of the territorial army, for the balloon barrage squadrons and for certain other auxiliary services as well as for many branches of civil defence.

Among the occupations removed from the schedule the following grades appear under railway occupations: railway clerk, goods checker, caller-off, numberraker, goods yard porter, station porter, loader, sheetor, ticket collector, ticket examiner, train examiner, carriage, wagon, brake, &c. examiner, crossingkeeper, level crossing man, gateman (level crossing). The railway companies will also have grades included in the section dealing with horse-drawn vehicles which includes carman, carter (heavy two-wheeled vehicle), lorry driver, drayman, heavy van driver (heavy four-wheeled vehicle), horsekeeper, ostler.

Military Training Bill

The text of the Military Training Bill, which is to make temporary provision for rendering persons between the ages of 20 and 21 years liable to undergo training in the army forces of the Crown, was announced by the Government on May 1. The Bill applies with specified exceptions to every male British subject not ordinarily resident in a British Dominion who is between the ages of 20 and 21, whether he has reached the age of 20 when the Bill becomes law or thereafter becomes 20 years of age. It makes such British subjects liable to be registered for military training and to be called up for such training at any time within 12 months after having been registered.

The Minister of Labour may for good cause permit the anticipation or the postponement of the liability to be called up. Application for such permission on grounds of hardship if not granted by the Minister will be referred to a Military Training (Hardship) Committee for decision. The Courts of Referees appointed under the Unemployment Insurance Acts will be used as the basis of these committees. Failure to apply for registration renders a man liable on summary conviction to a fine not exceeding £5, and on conviction he will be registered even though he may have attained the age of 21.

Certain classes of men are exempted; these include British subjects ordinarily resident in the colonies, members of the regular forces, and men who were before April 27, 1939, members of the reserve and auxiliary forces. Persons with conscientious objections to military service may apply for provisional registration in a special register of conscientious objectors. This provisional registration may be confirmed by a local tribunal, constituted for the purpose, absolutely or subject to the performance of work of national importance. In other cases the tribunal may direct enlistment for non-combatant duties only, or may re-

ject the application entirely. There is a right of appeal to a central tribunal where the local tribunal is not unanimous, or where it gives leave to appeal.

After registration the man who is liable to be called up will be required to attend for medical examination by a medical board appointed by the Minister. After medical examination the person liable may be called up at any time within his period of liability to present himself where required, for six months' training, receiving not less than 10 days' notice, but may not be sent out of the United Kingdom. He will be deemed to have enlisted for four years as a militiaman but is not prevented from enlisting in the regular forces at any time, or from joining a reserve or auxiliary force for not less than three and a half years after he has completed six months' training. The military training notice will be accompanied, as necessary, by a railway warrant and an allowance in respect of subsistence.

Provision is made compelling employers to reinstate employees on termination of the training period under penalty, except where this is proved not to be practicable. Education authorities and governing bodies of universities and schools are required to furnish information with regard to present or former male students which is required by the Minister for the purpose of the Act.

The Act will be in force for three years unless previously terminated by Order in Council, but may be continued for one year at a time by Order in Council based on an address from each House of Parliament. It is expected that the number of persons who will be registered will be 300,000 in the first year, of whom 200,000 will be called up for military training and that in the second and third years the numbers are likely to rise by 50 per cent. During the initial period of continuous military training the man will be clothed, fed, and accommodated from military sources. His pay and conditions of service during the initial period of continuous training and the subsequent period of service in the militia or auxiliary forces will be governed by regulations to be issued in due course. Provision will also be made for the payment of special allowances in case of need to wives and dependants.

Reserve and Auxiliary Forces Bill

The text of the Reserve and Auxiliary Forces Bill was made known on May 1. The object of the Bill is to enable the reserve and auxiliary forces of the Crown to be called out for service either as a whole, or in such numbers as may be required, without having to adopt the usual procedure of Proclamations and Orders in Council declaring a state of imminent national danger or great emergency. In existing circumstances it may be necessary at any time to take the steps authorised by the Bill.

Provision is made for authority being

granted by Order in Council to the Admiralty and the Secretaries of State for War and Air to call out all or any members of the reserve and auxiliary forces. The authority conferred by the Order in Council will continue until it is terminated under the provisions of Clause 2. During that period the Admiralty and the Secretaries of State will have power, within the scope of the order, to call out such numbers of officers and men of the reserves and of the auxiliary forces, and for such periods, as may be necessary from time to time, to ensure preparedness against any external danger. The clause further provides that persons so called out shall be deemed to be on the same footing as if they had been called out under the several Acts or other instruments governing their liability in this respect. Provision is made compelling employers to reinstate employees on termination of the training period under penalty, except where this is proved not to be practicable.

Railway Replacement in Sicily

According to the *Trasporti e Lavori Pubblici*, it has been decided that the 563 km. (350 miles) of narrow-gauge railway in Sicily should be replaced by a motorbus and lorry service. Several reasons are given for the necessity of this change, notably that the average annual loss for the last five years has been in the neighbourhood of 17 million lire; that the average speed of the trains never exceeds 21 km.p.h. (13 m.p.h.), and in some cases attains only 15 km.p.h. (9 m.p.h.); and finally that the existing railway stations are too far away from the districts the railway is intended to serve. In one case it is as much as 13 km. (8 miles). This motor service will be run by the National Transport Institute (capital lire 28 million), and will be equipped with the latest type of vehicles. It is considered that the change should develop the island considerably from both the passenger and goods traffic viewpoints. It is also observed that this development will serve the interests of the Italian Government's autarchy scheme as the motors will use fuel oil obtained from the asphalt mines at Ragusa (Sicily) instead of coal. Although no final decision has yet been taken it is suggested that the following services should run:—

- 1.—Palermo to Porto Empedocle via Lercara, Cianciana, Raffadali, and Agrigento.
- 2.—Palermo to Sciacca via Chiusa Scalafani and Ribera.
- 3.—Palermo to Castelvetro via Giuliana, Sambuca, and S. Margherita Belice.
- 4.—Coastal line connecting Castelvetro and Porto Empedocle.
- 5.—Castelvetro towards Poggio Reale. It is hoped that the proposed services will cover about 700 km. (435 miles).

QUESTIONS IN PARLIAMENT

Shanghai-Nanking Railway

Mr. A. C. Moreing (Preston—C.), on May 1, asked the Prime Minister whether he was aware that the Shanghai—Nanking Railway, at present controlled by the Japanese, was now in complete working order and carrying a full load of passengers daily; and what steps he had taken to secure the payment of interest to British bondholders.

Mr. R. A. Butler (Under Secretary of State for Foreign Affairs): As far as my noble friend is aware, the situation remains as stated in my reply of April 6 to my honourable and gallant friend the Member for Chertsey (Commander Marsden).

Rail and Road Goods Traffic

Lieutenant-Commander R. T. F. Fletcher (Warwick, Nuneaton—Lab.), on May 1, asked the Minister of Transport if he had any statement to make on the report of the Transport Advisory Council on the "square deal" application of the railway companies.

Captain Austin Hudson (Parliamentary Secretary to the Ministry of Transport): I am unable to add to the answer given to questions on this subject last Wednesday.

Mr. F. B. Simpson (Ashton-under-Lyne—Lab.), on May 3, asked the Minister of Transport if he was now in a position to inform the House as to the result of the road and rail conversations and agreements.

Captain Euan Wallace: I regret that I cannot yet add to the reply which I gave to questions on this subject last Wednesday.

L.N.E.R. Electrification

Mr. Trevor Cox (Chester, Stalybridge and Hyde—C.), on May 2, asked the Minister of Transport what progress was being made with regard to the electrification of the L.N.E.R. between Manchester and Woodhead.

Captain Euan Wallace (Minister of Transport): I am informed by the L.N.E.R. that work on the electrification of the line between Manchester and Woodhead is progressing satisfactorily in accordance with a programme which contemplates its completion about the end of 1940.

New Chinese Railway

Lieutenant-Colonel Sir Arnold Wilson (Hitchin—C.), on May 3, asked the Under Secretary of State for Burma, whether he was aware that the Chinese Government was building a railway to the Sino-Burmese frontier; and whether he could give an assurance that no railway construction in Burma was contemplated to connect with it, and that no such project would be entertained without the fullest previous public inquiry and the assent of the Burmese Parliament.

Lieut.-Colonel A. J. Muirhead (Under Secretary of State for Burma): I have

seen reports that the Chinese Government has already commenced preliminary work for a railway from Kunming towards the Burma frontier. The project of a Chinese railway connecting with the railway system of Burma has been contemplated from time to time on many occasions during the past forty years. I can assure my honourable and gallant friend that nothing would be done in Burma without due consultation with all the interests in Burma concerned.

Taxation of Lorries

Mr. Wilfrid Roberts (Cumberland—N. Lib.), on May 3, asked the Minister of Transport whether his attention had been drawn to a recent case in the Scottish High Court by which road hauliers who made use of removable containers for the purpose of carrying livestock were now rated for taxation of their vehicles at a higher rate than had hitherto prevailed; and whether he would consider, in the interest of agriculture, taking any action to remove this additional burden upon such road hauliers.

Captain Euan Wallace: In December last my predecessor drew the attention of local taxation officers to the decision of the Scottish High Court in the case of *Paterson v. Burnet*, where, on the facts before them, the Court held that a certain structure on a vehicle had not the "real purpose of . . . something to sling on or off the vehicle with the load inside" and was, therefore, properly reckoned as part of the unladen weight of the vehicle. I see no reason for asking Parliament to amend the existing law on the subject.

Mr. Roberts: Am I right in thinking that the law at present operates very unfairly, in that railway companies' lorries which may occasionally have their super-structure taken off are taxed at the lower rate, whereas private hauliers' lorries with similar super-structure on them are taxed at the higher rate?

Captain Euan Wallace: I think it is perfectly consistent. The rate of tax payable on a goods vehicle depends on its unladen weight. I think it is clear that the intention of Parliament in 1930 was that the unladen weight of a vehicle should include everything that is an integral part of the vehicle in use.

PARLIAMENTARY NOTES

Mumbles Pier Bill

The Mumbles Pier Bill, which has already been passed by the House of Lords, was, on April 26, reported with amendments from the Committee on Unopposed Bills of the House of Commons.

London Passenger Transport Board Bill

The House of Lords Standing Orders Committee on April 25 granted leave to the London Passenger Transport Board to insert an additional clause in its Bill at present before Parliament to deal with the problem of level crossings on a branch line now being electrified. The board is extending the Central London tube railway from Liverpool Street to Leyton to form a junction with the L.N.E.R., whence tube trains would run over the Loughton—Epping and Ongar branch of that railway. The board secured Parliamentary powers in 1936 to carry out the work on condition that electric trains were not to run over the Loughton—Ongar branch until bridges had been constructed to enable six level crossings to be closed. Negotiations have been held up, and in the case of four crossings work could not be completed until the end of 1940. The board states that unless steps are taken to deal with the situation it seems inevitable that the public will be deprived for some eight months of the improved traffic facilities. It is also pointed out that the non-completion of the service involves £4,730,000 capital

of the board and the L.N.E.R. lying idle for varying periods. The clause the board desires inserted asks that subject to the consent of the Minister of Transport and to such conditions for the public safety as he might decide, it be allowed to run electric trains over the crossings.

On April 27 the Select Committee on Standing Orders of the House of Commons also permitted the additional provision to be inserted if the Committee on the Bill should think fit.

Railway and Other Reports

South Indian Railway Co. Ltd.

At a meeting of the board, on May 3, the undermentioned dividend was declared: Interim on ordinary stock of 2 per cent. ($\frac{1}{4}$ per cent. from surplus profits and $1\frac{3}{4}$ per cent. guaranteed interest) less income tax, on account of the year 1939.

Eastern Railways Company of France.—For the year 1938 the dividends are fr. 40 a share on the ordinary shares, and fr. 20 a share on *jouissance* shares.

Northern Railway Company of France.—For the year 1938 the dividend on the ordinary shares is fr. 70 on each fr. 400 share, and on the *jouissance* shares is fr. 54 a share, the same as in 1937 in both cases.

Sentinel Waggon Works (1936) Limited.—The full dividend on the 6 per cent. cumulative preference shares for the 12 months to December 31, 1936, will be paid on May 31.

A Big German Acceleration Programme

The German summer timetables, which will come into force on May 15, in common with those of the other countries on the mainland of Europe, are notable by reason of the considerable increase which is to take place in the number of high-speed diesel services from that date. Six new trains will be introduced, between Berlin, Frankfurt, and Basle; Dortmund, Cologne, and Basle; Leipzig, Bremen and Wesermünde; Cologne and Leipzig; Breslau and Leipzig; and Dresden and Hamburg. This will bring the number of German high-speed diesel services up to 16, and with the daily return journeys made by each unit, and certain subdivisions, there will be a total of 36 independent workings daily. Of the new services, FDt 34, at 7.54 a.m. from Berlin, *via* Halle, Frankfurt, Darmstadt, and Heidelberg, will run to Basle, reaching the German station there, 544 miles from Berlin, at 4.30 p.m., and the Swiss station at 4.52 p.m., where connection will be made with the Rheingold Express, which is extended from Basle to Milan. A similar connection is made in the reverse direction. The diesel service (FDt 33) leaving Basle (S.B.B.) at 12.10 and Basle (D.R.B.) at 12.30 p.m. and reaching Berlin at 9.00 p.m. Basle is also to be served by an entirely new service connecting the Westphalian industrial area with Switzerland. This train (FDt 50) will leave Dortmund at 6.47 a.m., call at Essen, Duisburg, Düsseldorf, Cologne (8.16 a.m.), and thereafter at principal stations up the Rhine, including Frankfurt, Mannheim, and Karlsruhe, and reaching Basle (D.R.B.), 420 miles from Dortmund, at 2.17 p.m. The return journey (FDt 49) will be begun at 5.24 p.m., and Cologne will be reached at 11.16 p.m. and Dortmund at 12.35 a.m. The Leipzig—Bremen service is to leave Leipzig at 8.32 a.m. (FDt 232) travelling *via* Bitterfeld, Magdeburg, Brunswick, and Hanover, and to reach Bremen at 12.19 p.m. and Wesermünde, 282.2 miles from Leipzig, at 1 p.m.; returning from Wesermünde at 5.43 and Bremen at 6.32 p.m. (FDt 233), it will reach Leipzig at 10.23 p.m. From Leipzig also will operate No. FDt 459, at 7.20 a.m., to Breslau *via* Dresden and Görlitz, a distance of 240.2 miles, Breslau being reached at 11.3 a.m.; returning at 3.58 p.m., No. FDt 458 will reach Leipzig at 7.51 p.m., in time to connect with the evening Berlin—Frankfurt high speed unit. From Cologne at 7.20 a.m. No. FDt 515 unit will work coupled to the FDt 17 Cologne—Berlin unit as far as Hanover, and will then travel *via* Brunswick, Magdeburg, and Halle to Leipzig, reached at 12.39 p.m.; return from Leipzig (FDt 520) will be at 5.46 p.m., by the same route but independently from Hanover, Cologne being reached at 11.28 p.m., a journey

of 352.7 miles. The last of the new services is over the 320.7 miles between Dresden and Hamburg, *via* Leipzig, Halle, and Magdeburg, and with a non-stop run over the 169.3 miles between Magdeburg and Hamburg, covered, on the westbound journey, in 140 min.; this train, No. FDt 584, will leave Dresden at 6.56 a.m. and reach Hamburg at 11.41 a.m., returning at 5.43 p.m. (No. FDt 583), and reaching Dresden at 10.35 p.m.

An acceleration of certain other of the diesel services will take place, in some instances restoring 1937-1938 speeds, and in others introducing faster times than ever previously. The *Fliegende Kölner* (FDt 16) leaves Berlin 11 min. later than previously (in order to connect at the Schlesiischer station with an express from Warsaw), but picks up its previous times at Hanover; this entails a booking of 114 min. for the 157.8 miles from Berlin (Zoo) to Hanover, at 83.1 m.p.h.—the fastest schedule on rails in the world—followed by 80 min. for the 109.6 miles on to Hamm as now, at 82.2 m.p.h. The Berlin—Beuthen unit is accelerated by 11 min. from Berlin (Schlesiischer) to Beuthen, and 13 min. in the reverse direction; for the 204.7 miles between Berlin and Breslau the times are 154 and 161 min. respectively, the former representing an average of 79.8 m.p.h. All the three Berlin—Hamburg—Altona services in each direction are accelerated, roughly to the fastest time reached by the original *Flying Hamburger*; in the outward direction the times for the 178.1 miles from Berlin to Hamburg are 139, 137, and 140 min., and on the up journey 140, 140, and 138 min., start-to-stop average speeds thus ranging between 78.0 and 76.3 m.p.h. The accelerations involved in these changes vary from 7 to 24 min. per train. In the same route the morning non-stop FD express is accelerated from 151 to 147 min. from Hamburg to Berlin, increasing the average speed to 72.7 m.p.h., the fastest bookings in Europe with steam, except for the new Belgian Brussels—Ostend trains to be introduced on July 15. Several other expresses on this service, which were slowed down in the last timetable revision, have been speeded up again; the 7.25 a.m. from Hamburg to Berlin starts at 7.10 a.m., and takes $3\frac{1}{4}$ hr. instead of $3\frac{1}{2}$ hr.; and the 5.57 p.m. starts at 6 p.m. and takes 3 hr. 20 min. instead of 3 hr. 34 min.

Connections between Berlin and East Prussia are improved by a new FD service, leaving Berlin (Schlesiischer) at 4.50 p.m. for Königsberg, and Königsberg at 4.6 p.m. for Berlin. Journey times are 6 hr. 38 min. in each direction for the 365.9 miles, including stops at Schneidemühl, Marienburg, and Elbing only. To compensate for slower running across the Polish corridor, the speed on German territory is very high:

the 153.1 miles between Berlin and Schneidemühl are covered in 146 min. eastbound and 142 min. (64.7 m.p.h.) westbound, and the 71.8 miles between Elbing and Königsberg in 70 min. eastbound and 69 min. westbound. The new trains are 18 min. faster eastbound and 33 min. faster westbound than any previous service. There are various other substantial accelerations over this route. Communications with Vienna are generally improved, and the fastest time between Berlin and Vienna comes down to 11 hr. 5 min. by a sleeping car express, though still by the somewhat circuitous route *via* Breslau, Oppeln, and Ratibor; this is roughly one hour quicker than the previous FD day service *via* Leipzig, Regensburg, and Linz. The extension of the Rhinogold express over Swiss metals between Basle and Milan was referred to in our March 17 issue; Milan is reached at 5 min. past midnight, and departure from Milan for the north is at 6 a.m. The Nuremberg portion of the daily Hook of Holland to Munich FD express is prolonged to Eger, in Sudetenland.

L.M.S.R. (LONDON) DRAMATIC SOCIETY.—On Tuesday and Wednesday of this week the L.M.S.R. (London) Dramatic Society presented at the Fortune Theatre, Drury Lane, the three-act play "The Strange Case of Blondie White." The book gives most of the opportunities to the male characters, and a well-chosen cast did full justice to the possibilities. Mr. Jack Pegg as "Major Mason" was a convincing chief of the murder squad at Scotland Yard; Mr. John Crownshaw was inscrutable as "Frank Warren," a crime novelist; Mr. William Read a particularly effective tallyman "Jackson"; and Mr. Reginald Barker quite professional as "Edgar Davis," a dentist. Mr. W. W. Sharp was a great success as "Harper," the porter at Othello Mansions. The principal ladies were Miss Ena Hopkins as "Mrs. Frank Warren"; and Miss Ethel Wright as "Miss Plumby," Frank Warren's super-efficient secretary. This excellent entertainment was produced by Mr. W. F. Humphreys.

FIRING THE HOOK CONTINENTAL.—An unusual lecture was given at the London headquarters of the Stephenson Locomotive Society on April 3 by Mr. W. Lee, of Stratford shed, L.N.E.R., whose subject was "The Hook Continental from the Fireman's Viewpoint." With the aid of large-scale drawings showing every station, signal, signal box, and bridge between Liverpool Street and Parkston Quay, with gradient profiles beneath, a graphic description was given of a typical journey over a difficult road with a train which may weigh 500 tons behind the tender. The speaker paid a high tribute to the capacity of this turn on the G.E.R. 4-6-0 locomotives as reboilered and modernised recently under the direction of Sir Nigel Gresley and now classified "B 12/3."

Railway Directors in Libel Action

Apologies tendered and pamphlets withdrawn

A libel action arising out of the publication of a pamphlet entitled "Justice for Railwaymen" by the Labour Research Department was settled in the King's Bench Division on April 28. Lord Stamp, Chairman of the London Midland & Scottish Railway; Major the Hon. J. J. Astor, a Director of the Great Western Railway; Mr. Samuel Richard Beale, a Director of the London Midland & Scottish Railway; Sir Francis Joseph, a Director of the London Midland & Scottish Railway; and the Hon. Arthur Wyndham Baldwin, a Director of the Great Western Railway, were the plaintiffs. Mr. W. H. Williams, Secretary of the Labour Research Department, and Mr. Charles Benning, Manager and Secretary of Watford Printers Limited, were the defendants. Counsel for the plaintiffs, Mr. G. O. Slade, announcing a settlement, said that the defendants were jointly responsible for the pamphlet "Justice for Railwaymen," which would more properly have been called "Injustice for Railway Directors."

Among statements in the pamphlet of which complaint was made was that railway directors had two main aims—"one is to squeeze out as much money as possible for the bondholders. The other is to keep freight charges comparatively low—at any rate for the products of heavy industry—and to get special reduced rates for their own goods. . . . The railway directors include the most famous of capitalist financiers and economists—men like Lord Stamp, Director of the Bank of England and pride of the London School of Economics, created a baron in 1938, and Major J. J. Astor, M.P., of *The Times* and the Cliveden set. But even these great thinkers have been able to discover only one effective way of satisfying both the stockholders and the big industrialists—and that is by underpaying and overworking the workers on the railways. . . ."

That was the sort of stuff one would think people might have avoided in these enlightened days, said Mr. Slade. His clients, however, took the gravest objection to other statements: "There is nothing in law to prevent the directors from faking up a black picture of the railways' profits. But neither is there any law compelling the workers in the industry to accept this picture as the truth. . . . Thus the workers are to go short while huge profits are made in iron and steel. But railway directors such as S. R. Beale, of Guest, Keen and Nettlefold and the L.M.S.; A. Baldwin (Stanley's son) of Redpath Brown and the G.W.R.; Sir Francis Joseph, of Settle Speakman Collieries and the L.M.S., are the self-same people who net these profits. There

are not less than three of these gentry on the board of each main line, and six on the L.M.S."

The plaintiffs pleaded that this clearly meant that they had abused their position and betrayed the trust and confidence reposed in them as railway directors. Mr. Slade said that the moment the statement of claim was delivered the defendants took legal advice and then, for the first time, they realised the seriousness of these statements and their total inaccuracy. As the plaintiffs would not dream for a moment of accepting a penny of profit out of an action of this kind—and, indeed, its main object was to obtain an injunction—they agreed to a settlement on terms. The terms were that the defendants should withdraw absolutely and unconditionally

the statements complained of, in open court, give an undertaking that they would not further publish the pamphlet containing the statements complained of, or any similar libels, call in and destroy all undistributed or unsold prints of the publication, procure the insertion of the apology in the *Railway Review* and *The Labour Research Monthly Circular*, and indemnify the plaintiffs against their costs.

The apology acknowledged that there was not, and never had been, the slightest foundation for any of the imputations, and expressed regret that they should ever have been made. Mr. Neil Lawson, for the defendants, said that as soon as his clients obtained advice they took the earliest possible steps to withdraw the offending matter from circulation. He wished to repeat the undertaking, which formed part of the apology, to call in such of the matter as might not already have been called in.

Railway Educational Tours in Victoria

The Scholars' Educational Tours of railway activities introduced in 1937 by the Victorian Railways Commissioners in conjunction with the Education Department of Victoria, have proved an unqualified success. These tours are conducted with a two-fold purpose, to broaden the general knowledge of the participants, and to instil into their minds a realisation of the important role which the railways play in the life of the community. Practically every phase of railway operation in the metropolitan area is included in the ten tours, which embrace visits to construction and repair workshops, goods, dining car, and locomotive depots, powerhouses, substations, storehouses, printing works, and the special telephone exchange, the telegraph and train control offices, and the freight accounting section in the Railways Administrative Offices, Spencer Street, Melbourne. Competent guides supplement the inspections with detailed explanations, and leaflets are issued concerning each activity included in the tours.

The tours were temporarily discontinued owing to the infantile paralysis outbreak last year, but since they were recommenced on July 4, 1938, there has been a steady flow of bookings, with the result that about 1,000 children each week have been taking part in the tours. The figure could be considerably increased, but it is necessary to avoid interruption or inconvenience to the various activities visited. Since the tours were inaugurated a total of 29,143 individual inspections have been made. The scheme has attracted all types of schools, and bookings have been received from State, high, technical, and public schools, as well as private and denominational schools. Many

scholars attending primary schools make the whole series of inspections, but principals of secondary schools generally nominate the tours which are considered to have the greatest bearing on the educational courses being taken by the scholars.

Specially reduced second class fares are granted to the scholars for travel to the station nearest the point where the inspection is to be made, and free travel is afforded teachers on the basis of one teacher for every 24 children. Examples of the fares on a mileage basis are 5d. for a return journey of 10 miles, 7½d. for 15 miles, and 1s. 1½d. for 27 miles. Reduced fares also apply for schools beyond the suburban area. When scholars make their first inspection, they automatically become members of the Victorian Railways Scholars' Club, which has its own distinctive badge, issued free by the department. Every member receives a monthly copy of the *Scholars' Club Bulletin*, which is a further medium for making the children railway-minded. In the bulletin interesting phases of railway activity and of railway history generally are explained in simple, non-technical language, calculated to give a comprehensive idea of the detailed organisation and close teamwork that make a big railway system run smoothly and efficiently.

The popularity of the Scholars' Educational Tours is reflected not only in the large number of bookings, but also in the numerous letters of appreciation received by the department from schoolmasters and others. Letters from other States and New Zealand reveal that the educational tours have given a distinct impetus to the study of railway problems in Australia.

London Passenger Fares

Railway Rates Tribunal Inquiry

The Railway Rates Tribunal, sitting at the Incorporated Accountants' Hall near the Temple station, continued on April 27 its consideration of the cases for the opponents to the application by the four main-line companies and the London Passenger Transport Board for sanction to a 5 per cent. increase in certain fares within the London Passenger Transport Area. The case for the Dagenham Borough Council had been presented on April 25, suggesting that an increase in workmen's fares would lead to a greater use of bicycles. Most workmen in that district travelled at least 10 miles to their work, and the proposed increase in their fares would be $\frac{1}{2}$ d. a day. There had been a great improvement in frequency of service within the last six years, but the population had increased faster than the facilities.

One of the points raised in the case of the Warlingham Ratepayers' Association on April 27 was that there should be some roofing over the entrance to Upper Warlingham station because people had to stand there to wait for a bus in an exposed position.

Mr. John Parker, M.P. for Romford, said that his constituents were very discontented with the present transport facilities offered to them and with the present fares. Juvenile labour was particularly hard hit. Unless a revision were made of the London Passenger Transport Act, 1933, there was no adequate way of ventilating grievances by the public.

Mr. S. A. Hill, a borough councillor for Surbiton, giving evidence on behalf of the Surrey Ratepayers' Association, suggested that more bus facilities would bring more revenue to the London Passenger Transport Board.

Mr. S. E. Pocock, addressing the tribunal on behalf of various ratepayers' associations, submitted that the London Passenger Transport Board could afford today to pay less to renewal account, and ought to do so before increasing revenue by raising fares.

Mr. Harold B. Williams, for the Middlesex County Council, contended that this application to the tribunal was premature. There was no evidence that, viewed alone, the traveller in the London Area was not providing a sum which paid for the cost of his travel. If the improvement programme were continued and a cheap and efficient service provided, the traffic itself would in all probability fit the bill which the companies had to meet.

Mr. K. A. Baker, a member of the Committee of the London District branch of the Musicians' Union said, on April 28, that any increase in fares would be a hardship to musicians.

For the London branch of the Association of Assistant Masters in Secondary Schools, Mr. G. F. E. Rude said that any imposition of higher ex-

penditure on fares would fall most hardly on those parents of boys in secondary schools who could not afford to pay.

For the British Youth Peace Assembly it was submitted that legislation cutting down the hours of work for young people was offset by the fact that they had to get to town very much earlier than their working day began in order to take advantage of workmen's fares.

Counsel for the Welwyn Garden City Urban District Council maintained that many of the better class of black-coated workers in the district who now had first class season tickets would be compelled to travel third if the proposed increases were sanctioned.

Overcrowding, insufficiency of actual trains, and restricted availability of late workmen's tickets were among the complaints raised on behalf of the Union of Post Office Workers on May 1. If an increase in fares were granted it was asked that it should be limited to six months.

Mr. Jack Gaster, representing the

London District Committee of the Communist Party, contended that on the main lines passengers were really subsidising the low class goods traffic. If nothing were paid to the "C" stockholders in one year, and in the third year only a small amount were provided for renewals and the full dividend were paid, the "C" stockholders would not be able to apply for a receiver.

Miss Godwin, for the Association of Women Clerks and Secretaries, called attention to the large proportion spent in fares out of small incomes.

Sir Walter Monckton, K.C., replying on May 2 for the applicants, said it was really incontestable that the Act of 1933—for all parties to the pool—required them to function on a self-supporting basis. In the case of railways public interest as understood by Parliament involved consideration of the financial resources of the railway companies. He asked what was peculiar to the provision of transport which made it right to say that an increase in cost of transport was to be differentiated from other increases and selected as a burden to be resisted as "the last straw."

Sir Walter Monckton's reply was continued yesterday.

G.W.R. Final Ambulance Competition

The G.W.R. 1939 series of first-aid competitions, which had been in progress since February last, culminated in the final contest held in the General Meeting Room, Paddington, on April 28. From 9.45 a.m. onwards the contest attracted the interest of many spectators, including some of the chief officers of the company. The adjudicators were Captain A. C. White Knox, M.C., for team work, and Dr. E. J. Selby for individual work. The Rt. Hon. Viscount Horne, P.C., G.B.E., Chairman of the company, presided at the presentation of awards, and was supported by:

Mr. R. Carpmal, Chief Engineer; Dr. H. Cavendish Fuller, Chief Medical Officer; Mr. H. Adams Clarke, Staff Assistant to the General Manager; Mr. R. A. P. Setterfield, Manager, Hotels Department; Mr. G. Stephens, Chief of Police; and a number of other officials.

The result of the competition was announced by the Centre Secretary, Miss C. A. Ault, as under:—

	Marks
1. Barry Loco (Directors' Challenge Shield and prizes) ...	235
2. Pontypool Road (Carvell Cup and prizes) ...	234
3. Swindon (prizes) ...	223½
4. Lampeter (prizes) ...	223
5. Filton.	
6. Kingston.	
7. Banbury.	
8. Shrewsbury.	

In the course of his address, Lord Horne paid tribute to the admirable spirit which railwaymen evinced in first-aid work. Their skilled services were available to the general public, and much of their work was accomplished outside the railway sphere. In

the competition there was very close marking between the teams. He congratulated them all and extended his best wishes to the Barry and Pontypool Road teams, who would represent the company at the inter-railway ambulance competition. Lord Horne then presented the challenge shield to the winners, the Carvell Cup to the runners-up, prizes to members of the four highest teams, and the Butt Bowl to the Kingston team, which obtained the highest place in the competitions in the beginners' class. Advantage was also taken of this occasion to present the prizes to the Cardiff and Northern teams, which had attained highest places in the G.W.R. police ambulance competition.

Before the distribution of gold, silver, and bronze medals and certificates in respect of exceptionally efficient first-aid rendered during 1938, Dr. Cavendish Fuller gave a brief résumé of the cases selected, and mentioned that the recipient of the gold medal had been called upon to deal, in a serious road accident, with four patients more or less simultaneously. A vote of thanks to the doctors was proposed by Mr. Carpmal, to which Captain White Knox replied on behalf of himself and his colleague. In commenting on the high standard of the work, he said he was particularly struck by the good commonsense and the quiet and efficient way in which the teams went about their treatments. The proceedings concluded with a vote of thanks to the Chairman, proposed by Mr. W. F. Wills, Ambulance Secretary, Bristol Division.

Repairing Hurricane and Flood Damage

Extensive work after New England storms

The very extensive damage caused by the great hurricane and floods in New England was described in our issue of October 21 last. In the work of repairing the various railways affected, permanent way and bridgework maintenance equipment played a vital part, and materially hastened resumption of services. Cranes, excavators—both rail and caterpillar-mounted—caterpillar bulldozers, pile-drivers, spreaders, portable machine tools of all kinds, compressors, generator sets, flood-lighting plant, motor trollies and road lorries were in great demand all over the devastated area. On the New Haven line, however, additional plant had to be hired from contractors, and the latter also executed some of the repairs.

The large number of bridge wash-

aways necessitated the building of temporary pile and trestle bridges on a large scale. Caterpillar cranes equipped with steam hammers were very useful for these jobs, as the bridges were, in many instances, inaccessible by rail, and the completion of the trestle structures ahead of the platelaying saved much valuable time. The caterpillar bulldozers were particularly useful for a great variety of novel duties, such as pushing material under tracks festooned across breaches, the removal of slips from the track, building up the formation, and cutting down the approaches to wash-outs to permit of the laying of ramp graded diversions. At one place on the New Haven line where the track along the coast had been carried off the formation and buried in

debris, a bulldozer uncovered the track and rebuilt the formation for $\frac{1}{4}$ mile, after which the tractor carrying the bulldozer was used to pull the track back into line.

The uses to which all kinds of portable power tools were put were very varied, and track-tamping and other portable generator sets were requisitioned for flood lighting purposes, as work went on day and night. Lorries carried men and materials in all directions, also generator sets, steam hammers, and bulldozers, and the railways concerned were fortunate in having so many of their own available, and in being so well equipped with the other plant previously mentioned in these notes, which were extracted from our American contemporary *Railway Engineering and Maintenance*. The total cost of the damage to the railways in the New England States is now assessed at £1,300,000.

The London Bus

An effective historical window display arranged by
London Transport at its headquarters

The London Passenger Transport Board has recently devoted two of the windows in the main entrance to its headquarters at 55, Broadway, Westminster, to an interesting and effective display of historical relics relating to the early development of the London bus. These include such items as the nameplate of the "Compagnie Générale des Omnibus de Londres" from the offices of the company. There is a photographic reproduction of George Shillibeer's original London bus and also of a portrait of George Shillibeer himself. In addition there is a photographic copy of an advertisement from the *British Traveller* of July 18, 1829, announcing the introduction of the first London buses. Among original documents exhibited is a manuscript tender for building buses for a service between Bishopgate and Cannon Street stations which was begun on January 3, 1876. The tender, which is addressed to "Myles Fenton, Esq., Metropolitan Railway, 32, Westbourne Terrace, W.," is on the notepaper of George Lines, coachbuilder and contractor, of Southwark Bridge Road, and is dated May 21, 1875. It is in the following terms:—

"SIR,—I agree to build according to sketch submitted 8 omnibuses for the Metropolitan Railway Company to carry eight persons inside and four outside, with shafts, and inside and outside cushions complete, to be built of the best materials and workmanship, to be lined with American cloth or plush and painted and written in any colour or style approved or selected by the Company's Engineer, for the sum of £85 each omnibus, with four to be completed and ready for running by 23rd August, 1875, and a further four by November 15, '75.

I am, Sir,

Your Obedient Servant,
GEORGE LINES "

Other exhibits are a list showing fare tables of each line of omnibuses worked by the London General Omnibus Co. Ltd., dated July, 1866. Three tickets are shown, namely, a 6d. contract ticket available on all services of the L.G.O.C. in 1857; one of a book of 25 6d. contract tickets (yellow) of the same period; and a Maskelyne check ticket in experimental use about 1891 showing a perforation for every penny of the fare. The wording of the 6d. yellow ticket is:—

LONDON GENERAL OMNIBUS COMPANY
25 CONTRACT TICKETS 6D.

Conditions of Issue

"The Company shall have the right of calling in the tickets and redeeming them at par in the event of the issue of contract tickets being discontinued.

"The tickets will not be accepted in part payment of fares, nor will the conductors give change if a ticket of greater value than the fare is offered."

A handbill is shown announcing in the following terms a new service of buses in 1849:—

"To the Inhabitants of Pimlico and Westminster.—Omnibuses will start on Monday next, February 12, 1849, from the Marquis of Westminster, Belgrave Road, Pimlico, to the Bank. For 3d. all the way.

"Every morning at half past 8 o'clock and continue running throughout the day every 20 minutes through Warwick Street, Vauxhall Bridge Road, Regent Street, Westminster, Horseferry Road, Abingdon Street, and Parliament Street to the Bank until 10 o'clock at night.

"Returning from the Bank every 20 minutes by the same route until 11 o'clock at night.

"N.B.—Only 3d. all the way.

"On Sundays the last omnibus will not leave the Marquis of Westminster until half past 10 o'clock at night nor the Bank until quarter past 11 o'clock at night."

A further exhibit is a photographic copy of a Police Notice dated December 10, 1868, relating to the semaphore street crossing signals at Bridge Street, New Palace Yard. All the foregoing refer to the days of the "knifeboard" bus, and the documents and photographs are displayed in a wall-case alongside a model of a "knifeboard" placed in front of a large background photograph of the period. The second window is entitled "The Garden Seat Bus" and includes relics of more recent years such as hat and arm badges worn by bus officials before uniforms were provided, and licence badges for drivers and conductors. An interesting exhibit is a lithograph of about 1850 showing that the buses were then used for going to the Derby; this illustrates a four-horse "Favorite" (No. 3871) bearing the names of "E. Wilson and J. Wilson," once-famous proprietors in pre-L.G.O.C. days. A guide of the London Road Car Company showing routes, lists of fares, and time-tables, and dated January 1, 1891, is also on view. The introduction of the motorbus is represented by a prospectus of the London Steam Omnibus Co. Ltd.; one of the free tickets issued to the public during some experimental runs; and a photograph of the first London petrol-engined motorbus, which went into service in 1899.

NEW L.N.E.R. HALT NEAR LEEDS.—The L.N.E.R. is to build a halt between Scholes and Cross Gates, on the Leeds-Wetherby branch. Extensive building developments are taking place on the west side of the line at this point, and it is expected that another estate will shortly be developed on the east side of the line. The new halt, which will comprise up and down platforms 120 yd. long with waiting rooms, a booking office, and footbridge, will be served by the existing train service between Church Fenton, Wetherby, and Leeds.

NOTES AND NEWS

Loudspeaker Installations at Exeter and Taunton.—Arrangements have been made by the G.W.R. for Exeter and Taunton stations to be equipped with permanent loudspeaker installations.

More Approach-lighted Signals, L.N.E.R.—Approach lighting is to be applied to 17 automatic distant signals in the Southern Area of the L.N.E.R. These signals are situated on the main line between King's Cross and Retford; near Audley End on the Cambridge line; near Sleaford; and near Leeds.

Railway Troops Memorial Windows.—The dedication of the five memorial windows presented by the four group railways and the London Passenger Transport Board in memory of the railway troops who fell during the great war, will be carried out by the Chaplain General on Sunday afternoon, May 14, at St. Martin's Church, Longmoor Camp.

Midland Uruguay Railway Debenture Plan.—At the adjourned meeting of the 5 per cent. prior lien debenture stockholders of the Midland Uruguay Railway Company held on April 25 the resolution authorising the suspension of the application of the appropriations to the sinking fund for two years was approved. This makes effective the resolution passed on April 4 by holders of the 5 per cent. debenture stock of the Midland Uruguay Extension Railway Company authorising a reduction in the rate of interest from 5 per cent. to 3 per cent. for two years.

Morden Station Traffic, London Transport.—In the Morden area peak traffic is exceptionally heavy and difficult to handle, particularly during the concentrated rush for the last workmen's train in the morning. A check taken during 1938 by the London Passenger Transport Board showed that buses fed Morden station with more than 10,000 passengers between 7 and 9.30 a.m., and that about one-third of this total travelled between 7 and 7.30 to catch the workmen's trains. But during this half hour 5,000 rail tickets were issued, so that, presumably, some 2,000 workmen live within walking distance of the station.

Aberdeen-Penzance Service.—A new type of buffet restaurant car has been placed by the L.N.E.R. on the Aberdeen-Penzance through service, to work between York and Swindon, in replacement of the articulated combined brake composite and kitchen cars which have been used in this train for a number of years past. The new cars are 60 ft. long; internally they contain a kitchen and a buffet counter at one end, a third-class saloon in the centre seating 18 passengers, and a first-class saloon seating 12 at the other end. The first and third class saloons are separated by transparent Perspex partitions, similar to those used in the first-class restaurant cars of the new Flying

Scotsman trains. Each of the new cars weighs 42 tons.

Unloading Rolling Stock in Iran.—Considerable difficulties have been experienced in building up heavy German export trade with Iran, says *Hansa*, owing to the fact that no suitable cargo-handling equipment is yet available at the port of Bandar Shahpur. To meet these conditions, the Hansa Linie has fitted its vessels engaged in Persian Gulf trade with derricks of 120 tons lifting capacity. This tackle has proved specially useful in handling locomotives and rolling stock.

A Forty-Year Railway Retrospect.—The Railway Club welcomed Mr. Charles E. Lee, Assistant Editor of *THE RAILWAY GAZETTE*, at a meeting held in the hall of the Royal Scottish Corporation, Fetter Lane, E.C.4, on March 30. In a lecture entitled "The Past Forty Years in Retrospect" Mr. Lee gave particulars of many of the changes that had taken place on British and foreign railways during the period under review, and his remarks emphasised the great progress made in all phases of railway construction and operation. A large number of lantern slides was shown in conjunction with the lecture.

Collision at Farringdon Station, L.P.T.B.—On Monday evening last (May 1) at 9.42 p.m., a Metropolitan Line train from Aldgate East to Hammersmith, composed of metadyne, all-metal stock with push-button doors, came into collision just west of Farringdon & High Holborn station, L.P.T.B., with the locomotive of a G.W.R. goods train crossing over from the up Metropolitan Line to the Widened Lines on its way to Smithfield. In all, 19 persons were slightly injured and received hospital treatment. Of these, 14 were passengers and five were members of the staff.

Railway "Shadow" Headquarters.—The Press Association announces that the L.M.S.R. and L.N.E.R., in their plans to be prepared to meet any national emergency which might arise, have acquired sites in the country to serve as "shadow" headquarters, complete with duplicate sets of offices and accommodation for staffs. If necessary these will replace the present London general offices. Both sites are officially described as being "well away from London," but it is obviously undesirable for details of the exact location and arrangements to be published, as they would become effective only in a state of emergency, in which the railways would be an integral part of the defence organisation.

L.M.S.R. Goods Service Acceleration.—The biggest all-line speed-up of goods trains ever undertaken by the L.M.S.R. came into operation on May 1, when 3,000 goods trains were accelerated to give a total saving in journey time of 15,000 min. a day. The programme

affects all classes of goods trains from the fast "F.F.I." services to mineral and empty wagon trains. Most of the alteration take place on the Midland Division, where 2,000 trains have been quickened up by 10,000 min. daily. Examples of individual accelerations include 40 min. Carlisle to Liverpool, 120 min. Carlisle to Crewe, 57 min. Crewe to Carlisle, 35 min. Willesden to Crewe, 59 min. Willesden to Nuneaton, 19 min. Carlisle to London, 18 min. London to Carlisle, 25 min. Leeds to London, 65 min. Toton (Notts) to London, 26 min. Gloucester to Birmingham, and 20 min. Birmingham to Derby.

Railway Students' Association.—The annual general meeting of the Railway Students' Association was held at the London School of Economics on Thursday, April 27. Mr. L. W. Orchard, Chairman of the association, presided. Mr. R. Holland Martin, C.B., Chairman of the Southern Railway, was unanimously elected President of the association for the session 1939-40, and all the remaining vice-presidents holding office were re-elected. Mr. H. Bailey, L.N.E.R., was re-elected Honorary Treasurer; and Mr. S. E. Bellamy, L.N.E.R., and Mr. C. A. Nisbet, G.W.R., joint honorary secretaries. Mr. F. R. Day, L.P.T.B., Vice-Chairman of the association, who has been a member of the committee for several years, intimated his wish not to seek re-election owing to business reasons.

New Summer Air Services.—The Air Transport Licensing Authority has granted licences for summer services only between London and the North to Railway Air Services Limited, and North Eastern Airways Limited. The services are:—

Railway Air Services Limited.—London (Croydon) and Glasgow—intermediate landings at Birmingham, Manchester, Liverpool, Isle of Man, and Belfast—to October 31 next. Belfast and Glasgow—no intermediate landings—to October 31 next. London and Liverpool—intermediate landing at Manchester—to September 16 next.

North Eastern Airways Limited.—Croydon and Aberdeen—intermediate landings at Newcastle, Grangemouth, Perth—to October 31 next.

L.N.E.R. Northern Belle Cruises, 1939.—The L.N.E.R. Northern Belle cruising train will leave King's Cross on Friday nights, June 9 and 23, for a one-week itinerary covering 2,000 miles. The train will cruise up the East Coast of Scotland via Edinburgh, Dundee, and Aberdeen to Lossiemouth and Inverness, returning southwards through the pass of Killiecrankie to Perth and the Forth Bridge. It will then turn westwards and travel up the West Highland line to Fort William, and Mallaig, whence the return to London will be made via Glasgow, Edinburgh, and the East Coast route. Motorcoach excursions have been arranged to Balmoral, Drum-na-droicht, Culloden Moor, Loch Tay, and other well known beauty spots, and steamer trips on Loch Lomond and Loch Katrine. The fare from London,

including day and night accommodation on the train, road tours, admission charges, meals, &c., will be £20. Visitors from the Continent may make the tour for £25, including a day in London and the return journey across the North Sea.

L.M.S.R. Cup Final Traffic.— From the L.M.S.R. operating point of view, Cup Final day, 1939, must rank as the most successful for many years, as 57 special trains were run to London from all parts of the system, including 23 from Wolverhampton and district. Trains were terminated at Euston (27), St. Pancras (19), Wembley (6), and Kensington, Addison Road (5). Of these, 25 arrived punctually or before time, 16 were from 1 to 5 minutes late, 11 were from 6 to 10 minutes late, and 5 trains recorded late arrivals of over 10 minutes. The six trains to Wembley brought up the rear of a procession lasting from about 3.0 a.m. onwards, and included a first class *de luxe* special conveying the Wolverhampton team and directors. Of these specials, four arrived on time and the other two were

not more than 5 minutes late. The return working was also satisfactory, all trains departing to time, three leaving Wembley shortly after the match, and the remainder from Euston and St. Pancras at intervals from 9.45 p.m. Saturday to 3.0 a.m., Sunday. The usual shuttle service of steam trains between Euston and Wembley was in operation before and after the match.

L.N.E.R. Musical Society's Dinner - Dance.— The L.N.E.R. musical society concluded its season with a dinner-dance at the Abercorn Rooms, Liverpool Street Hotel, on April 20, presided over by Mr. A. W. Headley. The toast of "The Chairman" was proposed by Mr. Arthur Vale, Vice-Chairman, who referred to the organising ability of Mr. Headley, who had raised the society to an outstanding position among such organisations. Mr. Vale also recalled that the idea of the society holding dances originated with Mr. Percy Syder, London City Manager, 20 years ago, and that Mr. Syder had acted as M.C. at the first such function.

British and Irish Railway Stocks and Shares

Stocks	Highest 1938	Lowest 1938	Prices	
			May 3, 1939	Rise Fall
G.W.R.				
Cons. Ord. ...	65½	25½	26½	+1½
5% Con. Prefce....	118¾	74	75	-1
5% Red.Pref.(1950)	111¾	90	89	—
4% Deb. ...	111	97½	92½	-1½
4½% Deb....	112½½	100½	95	—
4½% Deb....	118½	104	100½	-2
5% Deb. ...	131½	119	112½	—
2½% Deb....	69¾	60	60½	—
5% Rt. Charge ...	129	114	106½	—
5% Cons. Guar. ...	128½	103	99	-1
L.M.S.R.				
Ord. ...	30½	11	12¾	+½
4% Prefce. (1923)	70½	23	31½	+2
4% Prefce. ...	82½	43¾	51½	+2
5% Red.Pref.(1955)	103½	66	69½	—
4% Deb. ...	105½½	85	86½	-2½
5% Red.Deb.(1952)	114½	105	106½	-½
4% Guar. ...	102¾	77½	76	-1
L.N.E.R.				
5% Pref. Ord. ...	89½	3½	4	—
Def. Ord. ...	47½	21½	2	—
4% First Prefce.	68½	21	26½	+2
4% Second Prefce.	27½	8	10	—
5% Red.Pref.(1955)	97	40½	46½	—
4% First Guar. ...	97½	66½	65½	-1½
4% Second Guar. ...	91½	52	53½	+2½
3% Deb. ...	79½	60	60½	-½
4% Deb. ...	104½	77	80½	-1½
5% Red.Deb.(1947)	110½	97	102½	—
4½% Sinking Fund Red. Deb.	108½½	101	100	—
SOUTHERN				
Pref. Ord. ...	87	47½	62	—
Def. Ord. ...	21¾	9¼	12¾	—
5% Pref. ...	115	83	85	-1
5% Red.Pref.(1964)	115½	98	95½	—
5% Guar. Prefce.	128½	106	106	—
5% Red.Guar.Pref. (1957)	116	109½	105½	-1
4% Deb. ...	109½	95	93½	-1
5% Deb. ...	129	117	112½	—
4% Red. Deb. 1962-67	107	101½	101½	—
BELFAST & C.D.				
Ord. ...	4	3½	4	—
FORTH BRIDGE				
4% Deb. ...	102	99½	94½	-2
4% Guar. ...	103½	94½	92	-2
G. NORTHERN (IRELAND)				
Ord. ...	5½	2½	3½	—
G. SOUTHERN (IRELAND)				
Ord. ...	25½	8½	8	—
Prefce. ...	35	13	12¼	—
Guar. ...	70¼	30½½	25½	—
Deb. ...	83	56	47	-1
L.P.T.B.				
4½% "A" ...	119½	107½	105	-2
5% "A" ...	130	117	113½	-1
4½% "T.F.A." ...	108	98	101½	—
5% "B" ...	122½½	105	105½	-1½
"C" ...	84	68	64½	—
MERSEY				
Ord. ...	24½	16½	20	—
4% Perp. Deb. ...	102½	94¾	91	—
3% Perp. Deb. ...	77	69	66½	—
3% Perp. Prefce.	66½	57	51½	—

British and Irish Traffic Returns

GREAT BRITAIN	Totals for 17th Week			Totals to Date		
	1939	1938	Inc. or Dec.	1939	1938	Inc. or Dec.
L.M.S.R. (6,831½ mls.)						
Passenger-train traffic...	463,000	477,000	- 14,000	7,100,000	7,274,000	- 174,000
Merchandise, &c. ...	527,000	482,000	+ 45,000	7,641,000	8,150,000	- 509,000
Coal and coke ...	249,000	240,000	+ 9,000	4,912,000	4,767,000	+ 145,000
Goods-train traffic ...	776,000	722,000	+ 54,000	12,553,000	12,917,000	- 364,000
Total receipts ...	1,239,000	1,199,000	+ 40,000	19,653,000	20,191,000	- 538,000
L.N.E.R. (6,320 mls.)						
Passenger-train traffic...	298,000	308,000	- 10,000	4,672,000	4,770,000	- 98,000
Merchandise, &c. ...	381,000	366,000	+ 15,000	5,325,000	5,798,000	- 473,000
Coal and coke ...	296,000	250,000	+ 46,000	4,456,000	4,456,000	—
Goods-train traffic ...	677,000	616,000	+ 61,000	9,781,000	10,254,000	- 473,000
Total receipts ...	975,000	924,000	+ 51,000	14,453,000	15,024,000	- 571,000
G.W.R. (3,737½ mls.)						
Passenger-train traffic...	190,000	194,000	- 4,000	3,004,000	3,043,000	- 39,000
Merchandise, &c. ...	228,000	200,000	+ 28,000	3,243,000	3,301,000	- 58,000
Coal and coke ...	119,000	108,000	+ 11,000	1,961,000	2,010,000	- 49,000
Goods-train traffic ...	347,000	308,000	+ 39,000	5,204,000	5,311,000	- 107,000
Total receipts ...	537,000	502,000	+ 35,000	8,208,000	8,354,000	- 146,000
S.R. (2,140 mls.)						
Passenger-train traffic...	291,000	290,000	+ 1,000	4,722,000	4,746,000	- 24,000
Merchandise, &c. ...	74,500	72,500	+ 2,000	984,500	1,039,000	- 54,500
Coal and coke ...	34,500	31,500	+ 3,000	592,500	582,000	+ 10,500
Goods-train traffic ...	109,000	104,000	+ 5,000	1,577,000	1,621,000	- 44,000
Total receipts ...	409,000	394,000	+ 15,000	6,299,000	6,367,000	- 68,000
Liverpool Overhead (6½ mls.)						
Mersey (4½ mls.) ...	4,318	4,192	+ 126	76,392	75,115	+ 1,277
*London Passenger Transport Board ...	579,300	568,100	+ 11,200	24,976,900	24,740,200	+ 236,700
IRELAND						
Belfast & C.D. pass. (80 mls.)	1,725	1,800	- 75	30,978	30,849	+ 129
" " goods	476	461	+ 15	7,311	7,423	- 112
" " total	2,201	2,261	- 60	38,289	38,272	+ 17
Great Northern pass. (543 mls.)	8,050	8,700	- 650	148,200	145,750	+ 2,450
" " goods	11,750	9,150	+ 2,600	169,050	148,200	+ 20,850
" " total	19,800	17,850	+ 1,950	317,250	293,950	+ 23,300
Great Southern pass. (2,076 mls.)	30,356	34,632	- 4,276	501,098	507,767	- 6,669
" " goods	46,359	40,069	+ 6,290	692,416	684,861	+ 7,555
" " total	76,715	74,701	+ 2,014	1,193,514	1,192,628	+ 886

* 44th Week (before pooling)

CONTRACTS AND TENDERS

New Subway at Tottenham Court Road Station

Mitchell Bros., Sons & Co. Ltd. has received a contract from the London Passenger Transport Board and work has just begun for the construction of a new deep-level subway, 70 yd. long, at Tottenham Court Road Underground station. It will give direct interchange between the southbound Northern Line platform and eastbound Central Line platform. Passengers will not have to go up to the circulating area and down again to the platforms by escalator. The work should be finished by the end of this year.

New Station for Loughton

W. T. Blay Limited has received a contract from the London Passenger Transport Board for building a new station at Loughton, which will become an important terminus for Central Line trains. When the North-East London electrification scheme, which is being undertaken jointly by London Transport and the London & North Eastern Railway as part of the £40,000,000 programme of new works, is completed, Central Line trains will provide a frequent service of through trains to the City and West End. The ticket hall will be on the west side of the tracks. The entrance will face the new Station Road, which will branch out into a large forecourt for buses. The ticket hall will be rectangular, with a curved, vaulted ceiling. It will have two large circular windows composed of glass bricks, one over the entrance and the other directly opposite. There will be two shops, public telephones, and lavatories, in the ticket hall, from which a subway will run underneath the tracks, with stairs up to each of the two island platforms. The building will incorporate a cycle shed and a trammen's depot and messroom. The contract for the station includes the Loughton substation. Messrs. Stanley Hall and Easton & Robertson are the architects.

C. & H. Leng & Sons has received an order from the South Indian Railway Administration for 273 dozen paint and varnish brushes to be supplied to the inspection of Messrs. Robert White & Partners.

The Chinese Government Purchasing Commission, on behalf of the Chinese Ministry of Railways, has placed the following orders to the inspection of Messrs. Fox & Mayo for equipment required for the Szechuen-Yunnan Railway:—

Wm. Hunt & Son (The Brades) Ltd.: Beater picks, sledge hammers, and other permanent way maintenance tools.

P. & W. MacLellan & Co. Ltd.: Rail sawing machines, rock drills and other small tools and reinforced indiarubber hose.

Stewarts and Lloyds Limited: Galvanised wrought iron pipes and fittings.

R. C. Gibbins & Co. Ltd.: Winches.

Fellows Bros. Ltd.: Screw jacks and chain blocks.

English Tools Limited: Railbenders and shovels.

The Metropolitan-Cammell Carriage & Wagon Co. Ltd. has received a further order from the Nizam's State Railway for 88 broad-gauge four-wheeled open wagons, type "O."

Repeat Order for Beyer-Garratts for Ivory Coast

The Société Franco-Belge de Matériel de Chemins de Fer has received an order from the Ivory Coast Railway (Chemin de fer de Côte d'Ivoire) for ten metre-gauge Beyer-Garratt locomotives to be built at this firm's works in collaboration with Beyer, Peacock & Co. Ltd. This order is a repeat of that for ten already supplied and it is of interest to record that two of the Beyer-Garratt locomotives of the first order have been transferred to the Dakar to the Niger Railway (Réseau de Dakar au Niger) and it is expected that further engines of the type for this railway will be ordered shortly. The repeat order placed by the Ivory Coast Railway follows on successful tests recently completed in the Ivory Coast. These locomotives, which are of the 4-8-2 + 2-8-4 type were described and illustrated in our issue of March 3, 1939, pp. 352-354.

Liverpool Street-Shenfield Electrification, L.N.E.R.

W. & C. French Limited has received a contract from the L.N.E.R. for the demolition of buildings, and for earthworks, drainage, &c., preliminary to the construction of carriage sidings at Ilford to stable the electric trains which will be in use between Liverpool Street and Ilford next year.

S. Butler & Company has also received a contract from the L.N.E.R. for the reconstruction and lengthening and raising of the footbridge between Ilford and Seven Kings.

The Bengal-Nagpur Railway Administration has placed orders with Associated Locomotive Equipment Limited for Lentz gear spares, and with W. G. Bagnall Limited for eight reversing links.

Sigmund Pumps (Great Britain) Limited has received an order from the L.M.S.R. for twenty fire pump trailer units, each of 500 gal. per min. capacity in connection with A.R.P. requirements. W. Gilmour Smith & Co. Ltd., of 64, Victoria Street, London, is this manufacturer's sole agent for railway companies.

The Bombay, Baroda & Central India Railway Administration has placed the following orders to the inspection of Messrs. Rendel, Palmer & Tritton:—

J. Baker & Bessemer Limited: 800 Steel tyres for carriages and wagons.

Monkbridge Iron & Steel Co. Ltd.: 726 Steel tyres for locomotives.

Geo. Turton Platts & Co. Ltd.: 318 Buffers for locomotives, carriages, and wagons.

Wm. Beardmore & Co. Ltd.: 500 Steel axles for carriages and wagons, and six crank axles for locomotives.

Steel, Peech & Tozer: 164 Straight axles for locomotives.

Banting & Tresilian Limited: 10,204 Steel boiler flue and arch tubes.

The Assam-Bengal Railway Administration has placed the following orders to the inspection of Messrs. Rendel, Palmer & Tritton:—

Steel, Peech & Tozer: 359 Steel tyres for locomotives.

J. Baker & Bessemer Limited: 1,200 Steel tyres for carriages and wagons.

Tubes Limited: 1,668 Steel boiler flue and arch tubes.

Steamship for L.N.E.R.

A. & J. Inglis Limited has received an order from the L.N.E.R. for a steamship for the Humber ferry service and to operate Humber cruises. This service between New Holland, on the Lincolnshire side of the Humber, and Hull (Corporation Pier) on the Yorkshire side, is at present maintained by two modern vessels, the *Tattershall Castle* and *Wingfield Castle*, and an older vessel, the *Killingholme*, which the new vessel is intended to replace. The new ship will be a steel paddle steamer similar to the two "Castles" with two buffets and accommodation for 1,200 passengers, but the space for cars will be enlarged to allow 20 vehicles to be carried instead of 16. The vessel is expected to be placed in service in the spring of 1940.

D. Wickham & Co. Ltd. has received orders from the Peruvian Corporation for one spare diesel power bogie with Perkins engine, and three Saurer-engined power bogies similar to those already ordered by the Peruvian Corporation from D. Wickham & Co. Ltd. as recorded in our issue of March 24 last.

The Gondal Railway Administration has placed orders to the inspection of Messrs. Robert White & Partners as follow:—

Guest, Keen & Nettlefolds: 104 Tons of dogspikes and 11½ tons of fishbolts.

Patent Ferrule Company: 4,500 Ferrules.

Thos. Firth & John Brown Limited: 17 Laminated springs.

Smith Bros. & Hill: 30 Helical and volute springs.

G.W.R. Contracts

The directors of the Great Western Railway Company have authorised the placing of the following contracts:—

The General Electric Co. Ltd.: Provision and installation of automatic manual telephone exchange at Plymouth (Millbay) station and provision and installation of automatic telephone exchange at Hockley.

The Titan Lift Co. Ltd.: Supply and erection of four 30-cwt. and one 20-cwt. electric lifts at Plymouth (North Road) station and supply and erection of one electric 2-ton goods lift for Slough goods shed.

The Patent Shaft & Axletree Co. Ltd.: Supply of steel girders and other steel and iron work of British manufacture.

The Limmer & Trinidad Lake Asphalt Co. Ltd.: Asphalting the circulating area at Penzance station and asphaltting a portion of No. 8 platform, Paddington station.

Gresham & Craven Limited: Supply of 15 Vapor-Clarkson coil automatic oil-fired steam boilers for diesel railcars.

Herbert Morris Limited: Supply and erection of one 1-ton transporter crane and runways, goods shed, Haverfordwest.

At the company's docks:—

Overhaul of the following vessels:—

Silley, Cox & Co. Ltd.: *Ss. St. Julien*.

Willoughby (Plymouth) Limited: *Ss. Sir Walter Raleigh*.

The Penarth Pontoon Slipway & Ship Repairing Co. Ltd.: *Dredger Peeress*.

OFFICIAL NOTICES

Crown Agents for the Colonies

COLONIAL GOVERNMENT
APPOINTMENTS.

APPLICATIONS from qualified candidates are invited for the following post:—
ASSISTANT DISTRICT ENGINEER required for the Government Railways of Palestine for two years of 18-24 months, with prospect of permanent salary £P430—£P450—£P500 a year, plus expatriation allowance of £P50 a year and cost of living allowance, at present £P48 per annum. (£P1 equals £1.) Free passages and, if married, for wife and children, and leave on full salary. Candidates, age 25-30, preferably single, must be Corporate Members of the Institution of Civil Engineers or hold an Engineering degree recognised as granting exemption from Sections A and B of the A.M.I.C.E. examination. They must have had

experience on a Home or Colonial Railway with particular reference to survey, track maintenance and Railway Civil Engineering practice.
 Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting M/8416.

Rio Tinto Company Limited.

DIVIDEND ON SHARES TO BEARER.

HOLDERS OF SHARE WARRANTS TO BEARER are informed that they will receive Payment of the Dividend declared at the General Meeting held on the 28th inst., at the rate of Two Shillings and Sixpence per Share on the Preference Shares, less Income Tax, on and after Saturday, the 13th May, 1939, on presentation of Coupon No. 84 on the Pre-

ference Shares, either at the Company's Office in London, or at the Société Générale, 29 Boulevard Haussmann, Paris.
 Coupons for payment in London must be left four clear days previously for examination, and may be deposited forthwith.

By Order,

J. DAVIDSON,
Secretary.

Offices of the Company:
 11, Old Jewry,
 London, E.C.2.
 28th April, 1939.

OFFICIAL ADVERTISEMENTS intended for insertion on this page should be sent in as early in the week as possible. The latest time for receiving official advertisements for this page for the current week's issue is noon on Thursday. All advertisements should be addressed to:—*The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

The Madras & Southern Mahratta Railway Administration has placed the following orders for materials to be supplied to the inspection of Messrs. Rendel, Palmer & Tritton:—

Barrow Hamatite Steel Co. Ltd.: 8,000 pairs of fishplates for BS90 BH rails.
 Bayliss Jones & Bayliss Limited: 32,600 fishbolts.
 Anderston Foundry Co. Ltd.: 124,000 cotters.

The Madras & Southern Mahratta Railway Administration has placed orders to the inspection of Messrs. Rendel, Palmer & Tritton with J. Baker & Bessemer Limited for 60 locomotive tyres and with Linley & Co. Ltd. for 23 copper firebox plates.

The Crown Agents for the Colonies have recently placed the following orders:—

Loudon Bros. Limited: Lathe.
 Aldhous Successors Limited: Launch.
 Bergius Co. Ltd.: Launch.
 Bullers Limited: Line materials.
 Monk Bridge Iron & Steel Co. Ltd.: Locomotive tyres.
 Morris Industries Exports Limited: Lorries.
 Albion Motors Limited: Lorry chassis.
 P. & W. Maclellan Limited: Mild steel angles, bars, channels, and flat.
 Siemens Electric Lamps & Supplies Limited: Meters.
 George Kent Limited: Meters.
 Turners Asbestos Cement Co. Ltd.: Pipes and fittings.
 Stewarts and Lloyds Limited: Pipes and water fittings.
 B. & S. Massey Limited: Pneumatic power hammer.
 C. Richards & Sons Limited: Rail clips.
 Lancashire Steel Corporation Limited: Rails and fishplates.
 Barrow Hamatite Steel Co. Ltd.: Rails and fishplates.
 The United Steel Cos. Ltd.: Rails.
 Staveley Coal & Iron Co. Ltd.: Sand-spun iron pipes.
 Herbertson & Co. Ltd.: Steelwork.
 Wm. Bain & Co. Ltd.: Steelwork.
 United Steel Cos. Ltd.: Steel sleepers.
 F. Braby & Co. Ltd.: Storage petrol tanks.
 Superheater Co. Ltd.: Superheater elements.
 Edgar Allen & Co. Ltd.: Switches and crossings.
 R. White & Sons Limited: Switches and crossings.
 General Electric Co. Ltd.: Telephones.
 Ericsson Telephones Limited: Telephone switchboards.
 Creed & Co. Ltd.: Teleprinter.
 British Thomson-Houston Co. Ltd.: Transformers and switchgear.
 W. & T. Avery Limited: Universal testing machine.
 Taylor Bros. & Co. Ltd.: Wheels and axles.
 W. C. Jones Limited: Wool waste.
 Callender's Cable & Construction Co. Ltd.: Dry core cable.

Locomotives required for India

The General Manager, East Indian Railway, Calcutta, is calling for tenders (Tender No. S/SP/947/A) for the supply and delivery c.i.f. at the Port of Calcutta of 35 2-8-2 locomotives with eight-wheeled bogie tenders of the Indian State Railway standard "XE" type. Tenders endorsed "Tender No. S/SP/947/A for the supply of XE Class Locomotives and Tenders" should reach the General Manager, East Indian Railway, Calcutta, by May 29. A copy of the invitation to tender, specification, and conditions of tender may be borrowed from the Department of Overseas Trade and copies of the drawings may be inspected at the offices of Hodges Bennett Limited, 16, Victoria Street, London, S.W.1.

The Indian Stores Department is calling for tenders (Order No. E. 3663) for the supply and delivery of quantities of coupling rods, floating bush type, complete with fixed and floating bushes, set screws, and spring washers. Tenders should be addressed to the Chief Controller of Stores, Indian Stores Department, Electrical Branch, Simla, to be received by June 1.

The Locomotive Trade in America

A review of the activities of the locomotive trade in the United States, based on reports received by the Department of Commerce, shows that 17 locomotives, namely, 15 diesel-electrics for service in America and two steam locomotives for export, were completed by the principal manufacturing plants during February; this total is one locomotive more than in February, 1938, when 16 locomotives, comprising 11 steam and five diesel-electrics, were built, none of them for export. On the other hand, the total for the first two months of the present year was only 40 as compared with 51 for the same period in 1938. Uncompleted orders at the close of February totalled 116 locomotives (including 45 steam, 21 electric, and 40 diesel-electrics) for home service, and four steam, four electric, and two diesel-electrics for export. These compared with unfilled orders at the end of February, 1938, for 159 locomotives, including 100 steam, 26 electric, and 30 diesel-electrics. These figures do not include locomotives built in railway shops nor railcars.

Coaches required for Portuguese East Africa

The Lourenço Marques Railway Administration is calling for tenders, to be presented in Portuguese East Africa by June 15, for the supply of 25 third-class metal coaches (each to accommodate 170 passengers). Firms desirous of offering coaches of United Kingdom manufacture can obtain further details from the Department of Overseas Trade, London, S.W.1. Reference number T.Y. 21752/1939 should be quoted.

American Railway Purchases of Fuel and Supplies.

Purchases of fuel, materials, and supplies by Class I railways in the United States in connection with their operation amounted to \$583,282,000 in 1938 according to the President of the Association of American Railroads, quoted by Reuters Trade Service from New York. Purchases in 1938 were less than in any year since 1933 and \$383,100,000 below those for 1937. The reduction resulted primarily from the serious financial condition of the railways, and from enforced reductions in maintenance work, as well as increased efficiency in operation, which particularly affected fuel purchases. In 1930, railway purchases for fuel, materials, and supplies amounted to \$1,038,500,000. Class I railways spent \$243,783,000 for fuel compared with \$294,293,000 in 1937. For bituminous coal alone their purchases totalled \$180,074,000, a decrease of \$36,201,000, for anthracite \$3,333,000, a decrease of \$575,000 compared with the previous year. For gasoline, there was an expenditure of \$4,120,000 and for other fuels \$2,703,000. Purchases of forest products amounted to \$56,968,000 compared with \$104,707,000 in 1937. For cross ties, including switch and bridge ties, the railways spent \$42,305,000, a decrease of \$22,994,000 on 1937. Iron and steel products bought totalled \$152,176,000 compared with \$359,409,000 in 1937. Purchases of steel rail, including new and second-hand except scrap, amounted to \$23,742,000 against \$44,424,000 the previous year. Track fastenings and other material used in laying rails cost \$16,347,000 a decrease of \$20,211,000. Miscellaneous purchases totalled \$130,355,000 in 1938 compared with \$207,974,000 in 1937.

Railway Share Market

The prevailing trend in all sections of the Stock Exchange has shown some improvement this week under the influence of the more hopeful views which have gained ground in regard to the immediate outlook for European political affairs. The volume of business was again very small, but the improvement in values, although moderate, was fairly widely spread. Gilt-edged securities were firmer on the Chancellor of the Exchequer's re-assurance that the Government is to continue its cheap money policy, and debentures and prior charges of the home railways were firmer in sympathy.

The traffic figures of the main-line railways for the past week were up to best expectations and tended to draw attention to the reduced levels to which many of the sound dividend-paying stocks, as well as the more speculative stocks, have declined in recent weeks. It is, however, not generally expected that home railway securities will make much recovery until the surrounding trend of the Stock Exchange shows sustained improvement. The market is continuing to take an encouraging view of the traffic outlook owing to the further evidence of increasing

activity in the heavy industries, and it is generally believed that the steel output figures for the current month will record a further increase.

L.N.E.R. issues were inclined to improve on the traffic gain for the past week. Some demand was reported for the 4 per cent. second guaranteed stock, partly on attention drawn to the apparently unduly large yield, and the price improved moderately to 51½. The 4 per cent. first guaranteed stock transferred around 64½, while the first preference was quoted at 25½ and the second preference at 10½. The 4 per cent. debentures were 81½ and the 3 per cent. debentures 61. L.M.S.R. stocks were also inclined to respond to the increased activity of the heavy industries served by the railway. The 4 per cent. guaranteed had a firmer appearance at 70, as did the 4 per cent. first preference at 50½ and the 1923 preference at 31, while the 4 per cent. debentures were quoted at 86½. Great Western ordinary fluctuated, but later recovered to 26½, and the 5 per cent. preference stock was 74½. Southern issues participated in the better market trend which developed towards the middle of the week, but pre-

viously lower prices had ruled for the junior stocks. The preferred ordinary became firmer at around 62, as did the deferred at 12½, but, as with most other railway securities, there was not a great deal of business in evidence. Particularly in the case of the guaranteed and prior charge stocks, buyers found that they are held firmly and that it is consequently not easy to obtain them in any amount at around current prices. London Transport "C" was better at 65½ and the prior charge issues were maintained in price.

Argentine railway stocks showed moderate response to the slightly better trend of markets and were aided by satisfaction with the latest traffic returns. Fractional gains were recorded among the ordinary stocks, and various preference stocks attracted some attention, notably Central Argentine 4½ per cent. and 6 per cent. preference, which improved to 24 and 27 respectively. Various of the debentures were also fractionally better on balance. American railway shares fluctuated moderately and were mostly lower on the week, but Canadian Pacific remained around \$4. Nitrate rails remained unchanged.

Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

Railways	Miles open 1938-39	Week Ending	Traffic for Week		No. of Weeks	Aggregate Traffic to Date			Shares or Stock	Prices						
			Total this year	Inc. or Dec. compared with 1938		Totals		Increase or Decrease		Highest 1938	Lowest 1938	May 3, 1939	Yield % (See Note)			
						This Year	Last Year									
South & Central America	Antofagasta (Chili) & Bolivia	834	23.4.39	£ 13,540	-	£ 5,900	16	220,230	278,420	-	£ 58,190	Ord. Stk.	14	7 1/4	7	Nil
	Argentine North Eastern ..	753	22.4.39	12,010	+	2,277	43	410,079	387,556	+	22,523	A. Deb.	6 1/2	2	3	Nil
	Argentine Transandine ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Bolivar ..	174	Mar., 1939	4,600	-	200	13	11,700	11,900	-	200	6 p.c. Deb.	8	7	7	Nil
	Brazil ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Buenos Ayres & Pacific ..	2,801	29.4.39	104,404	+	12,096	44	3,866,815	3,891,195	-	24,381	Ord. Stk.	6 1/2	3 1/4	3	Nil
	Buenos Ayres Central ..	190	15.4.39	\$69,900	-	\$1,800	42	\$4,199,800	\$4,869,100	-	\$669,300	Mt. Deb.	15 1/2	8	14	Nil
	Buenos Ayres Gt. Southern ..	5,082	29.4.39	158,127	+	30,211	44	6,348,325	6,616,128	-	267,803	Ord. Stk.	17 1/2	8 1/2	8 1/2	Nil
	Buenos Ayres Western ..	1,930	29.4.39	60,732	+	9,119	44	2,011,166	2,003,350	+	7,816	"	12 1/2	5	6	Nil
	Central Argentine ..	3,700	29.4.39	129,274	+	25,571	44	5,163,154	5,328,654	-	165,500	"	13 1/4	5 1/2	8	Nil
	Do. ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Cent. Uruguay of M. Video	972	22.4.39	18,633	-	2,134	43	785,957	778,409	+	7,548	Ord. Stk.	3	1 1/4	1 1/2	Nil
	Cordoba Central ..	1,218	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Costa Rica ..	188	Feb., 1939	21,719	+	2,952	35	177,211	197,323	-	20,112	Ord. Inc.	3 3/4	3 1/4	2	Nil
	Dorada ..	70	Mar., 1939	14,300	-	100	13	40,400	46,800	-	6,400	1 Mt. Db.	105 1/4	104	103 1/2	5 1/2
	Entre Rios ..	810	22.4.39	15,416	+	69	43	665,939	613,584	+	52,355	Ord. Stk.	7 1/4	3 1/2	4 1/2	Nil
	Great Western of Brazil ..	1,082	29.4.39	8,900	-	2,800	17	179,900	136,600	+	43,300	Ord. Sh.	3 1/2	1 1/2	1 1/4	Nil
	International of Cl. Amer. ..	794	Mar., 1939	\$213,868	+	\$31,186	12	\$514,264	\$594,574	+	\$119,690	1st Pref.	6d.	6d.	1 1/2	Nil
	Interoceanic of Mexico ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	La Guaira & Caracas ..	22 1/2	April 1939	5,880	+	825	18	21,700	19,730	+	1,970	Stk.	8	6 1/2	7 1/2	Nil
	Leopoldina ..	1,918	29.4.39	14,829	-	2,188	17	340,700	322,323	+	18,377	Ord. Stk.	4	1	1 1/4	Nil
Mexican ..	483	21.4.39	\$321,200	+	\$7,600	16	\$5,049,500	\$5,014,200	+	\$35,300	"	7 1/4	1 1/2	1 1/2	Nil	
Midland of Uruguay ..	319	Mar., 1939	8,943	-	1,388	39	82,558	86,303	-	3,745	"	14	1 1/2	1 1/2	Nil	
Nitrate ..	386	30.4.39	5,353	-	4,741	17	43,471	63,129	-	19,658	Ord. Sh.	52 1/2	19 1/2	15 1/2	5 1/2	
Paraguay Central ..	274	22.4.39	\$3,732,000	-	\$468,000	43	\$129,640,000	\$132,916,000	-	\$3,276,000	Pr. Li. Stk.	60	55 1/2	47 1/2	12 1/2	
Peruvian Corporation ..	1,059	Mar., 1939	89,598	-	10,836	39	609,165	740,756	-	131,591	Pref.	53 1/4	13 1/4	2	Nil	
Salvador ..	100	22.4.39	\$16,650	-	4,450	43	\$898,789	\$873,825	+	\$24,934	Pr. Li. Db.	23	20	19 1/2	Nil	
San Paulo ..	153 1/2	23.4.39	29,555	+	1,814	16	458,702	498,144	-	39,442	Ord. Stk.	64	28	24 1/2	35 1/2	
Taita ..	160	Mar., 1939	3,735	-	2,450	39	27,530	31,955	-	4,425	Ord. Sh.	13 1/2	28	7 1/2	1 1/2	
United of Havana ..	1,353	22.4.39	32,937	+	9,634	43	1,003,333	1,081,407	-	78,074	Ord. Stk.	35 1/2	1 1/2	1	Nil	
Uruguay Northern ..	73	Mar., 1939	852	-	145	39	9,110	8,478	+	632	Deb. Stk.	2	1	2	Nil	
Canada	Canadian National ..	23,772	21.4.39	671,686	+	49,807	16	10,288,454	10,161,548	+	126,906	—	—	—	—	—
	Canadian Northern ..	—	—	—	—	—	—	—	—	—	4 p.c.	72	60	69	5 1/2	
	Grand Trunk ..	—	—	—	—	—	—	—	—	—	4 p.c. Gar.	104	90	98 1/2	4 1/2	
	Canadian Pacific ..	17,185	21.4.39	457,000	-	6,200	16	7,312,400	7,484,400	-	172,000	Ord. Stk.	87 1/2	41 1/4	4	Nil
India	Assam Bengal ..	1,329	10.4.39	38,512	+	2,931	2	38,512	35,581	+	2,931	Ord. Stk.	81 1/2	70	66 1/2	4 1/2
	Barri Light ..	202	10.4.39	3,517	-	2,940	2	3,517	6,457	-	2,940	Ord. Sh.	60 1/2	54 1/4	50 1/2	5 1/2
	Bengal & North Western ..	2,108	10.4.39	74,657	-	18,488	2	74,657	93,145	-	18,488	Ord. Stk.	311	278	253	7 1/2
	Bengal Doars & Extension ..	161	20.4.39	2,599	-	1,055	3	5,570	7,318	-	1,748	"	89	83	85	7 1/2
	Bengal-Nagpur ..	3,272	10.4.39	215,625	+	5,978	2	215,625	209,647	+	5,978	"	95 1/2	90	86 1/2	4 1/2
	Bombay, Baroda & Cl. India ..	3,085	20.4.39	267,900	-	15,825	3	527,550	558,450	-	30,900	"	112 1/2	95	101 1/2	5 1/2
	Madras & Southern Mahratta ..	2,967	10.4.39	174,675	+	16,496	2	174,675	158,179	+	16,496	"	108	97	94 1/2	7 1/2
	Rohilkund & Kumaon ..	571	10.4.39	15,918	-	3,366	2	15,918	19,284	-	3,366	"	308	285	270	6 1/2
	South Indian ..	2,531 1/2	10.4.39	116,399	+	5,605	2	116,399	110,794	+	5,605	"	104	101	100 1/2	4 1/2
	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Various	Beira-Umtali ..	204	Feb., 1939	73,349	-	13,845	21	399,916	443,755	-	43,839	—	—	—	—	—
	Egyptian Delta ..	623	10.4.39	5,165	-	132	2	5,165	5,297	-	132	Prf. Sh.	7 1/2	5 1/2	—	Nil
	Kenya & Uganda ..	1,625	Mar., 1939	279,634	-	4,596	13	782,935	823,885	-	40,950	B. Deb.	49	41	40 1/2	8 1/2
	Manila ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Midland of W. Australia ..	277	Mar., 1939	16,576	-	1,390	40	138,752	131,004	+	7,748	Inc. Deb.	93 3/4	89	90 1/2	4 1/2
	Nigerian ..	1,900	18.3.39	41,098	+	3,224	51	2,053,275	2,742,256	-	688,981	—	—	—	—	—
	Rhodesia ..	2,442 1/2	Feb., 1939	327,027	-	64,066	21	1,838,418	2,101,534	-	263,116	—	—	—	—	—
	South Africa ..	13,284	15.4.39	605,292	-	17,422	3	1,364,040	1,338,344	+	25,696	—	—	—	—	—
Victoria ..	4,774	Jan., 1939	782,635	-	110,925	31	5,516,376	5,640,789	-	124,413	—	—	—	—	—	

Note.—Yields are based on the approximate current prices and are within a fraction of 1½.

† Receipts are calculated @ 1s. 6d. to the rupee.

The variation in Sterling value of the Argentine paper peso has lately been so great that the method of converting the Sterling weekly receipts at the par rate of exchange has proved misleading, the amount being over estimated. The statements are based on the current rates of exchange and not on the par value.